Have-sentences in discourse

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I am not naturally inclined to putting too much personal stuff here. A lot of things have changed in my life since I suddenly decided to start an MA in Linguistics –just before the deadline for enrolling. I thank all of you who were there then and still are, and also those who have since come and stayed. So to all friends and family: the question 'what was it that you study again?' should be answered by this thesis. I am not entirely sure it will though :)

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Resum/Abstract

Aquesta tesi investiga la interpretació de les frases amb el verb *have* en anglès. Aquest verb ha generat una gran quantitat de literatura en tots els àmbits de la lingüística, sense que s'hagi arribat a cap consens sobre com cal analitzar-lo. Dos dels motius que expliquen aquesta situació són la dificultat per determinar quin significat aporta *have* en tots els seus usos, i la restricció de definitud que presenta quan el seu objecte conté un nom relacional. En aquesta tesi analitzo com s'han tractat aquests dos problemes en la literatura semàntica, i proposo una nova anàlisi que qüestiona alguns supòsits de què parteix aquesta literatura: la visió transitiva dels noms relacionals, la naturalesa i l'abast de l'efecte de definitud, i una oposició simple entre sintagmes nominals indefinits i definits/quantificacionals. Així mateix, apunto una possible via per integrar en aquesta anàlisi alguns dels usos funcionals de *have*.

This dissertation looks into the interpretation of *have*-sentences in English. The verb *have* has given rise to a great amount of literature in all the subfields of linguistics; no consensus, however, has emerged on how it should be analyzed. Two of the reasons explaining this situation are the difficulty of determining what meaning *have* contributes to a sentence across its uses, and the definiteness effect it shows when its object contains a relational noun. In this thesis I analyze how these two problems have been tackled in the semantic literature, and I propose a new analysis that calls into question some of the assumptions this literature is built on: the transitive view of relational nouns, the nature and the scope of the definiteness effect, and a simple opposition between 'weak' and 'strong' NPs. Furthermore, I point at a possible way to integrate some of the functional uses of *have* into this analysis.

Contents

Chapter 0

Introduction

This dissertation is about *have*-sentences in English. It focuses mainly on the simplest uses of *have*, namely those where it takes a simple noun phrase[1] (NP) as an object.

(1) a. Mary has a new car
b. Mary has a nice sister

Despite their apparent simplicity, sentences like (1a) and (1b) pose several challenges for linguistic analysis. In this thesis I will mainly focus on two of these challenges. The first one can be plainly stated as a question: what does *have* mean? The most intuitive answer is probably that it expresses 'possession'. We all understand sentence (1a) as asserting that a possessive relation holds between Mary and a car. Expressing possession seems to be one of the core tasks of verb *have*, if not the main one. However, the notion of possession does not adequately capture the meaning of (1b). Neither does it seem to correspond to how we interpret *have*-sentences whose object does not denote a concrete entity that can prototypically be owned, as in (2), or whose subject cannot be conceived of as a possessor, as in (3).

(2) John has a big problem

(3) This house has four windows

The question boils down to choosing between three logical possibilities: (i) *have* has a vague meaning (related to notions such as 'possession', 'control', 'proximity', etc.) which encompasses all its possible uses; (ii) *have* is ambiguous and can denote any of a number of relations between its subject and its object; or (iii) *have* has no meaning at all; it just establishes an empty relation between two entities, and it is up to external factors (the meaning of its arguments, discourse context, and/or the world-knowledge of the conversational partners) to provide the relevant link between those entities.

[1] In this thesis I will not make use of the distinction between noun phrases and determiner phrases.

The second challenge associated with *have* that I will tackle has to do with the different behavior of relational and sortal nouns in object position. Intuitively, a relational noun is one that can describe an entity only by virtue of its standing in a certain relation to another entity. One clear example is *sister*: a female individual can only be a *sister* if there exists another entity with which she is connected by a siblinghood relation. The same is not true of *car*: an object can be described as a car irrespective of how it is related to any other entity in the world.

The difference between these two classes of nouns is relevant for *have*-sentences in the following way: if the object of *have* is an NP headed by a relational noun like *sister*, a definiteness effect arises, largely equivalent to that found in *there be* sentences. The same effect does not apparently show up (or at least not to the same extent) with sortal nouns like *car*. Note the contrast between (4a) and (4b), based on (1a)-(1b) above.

(4) a. Mary has the/every nice car
b. #Mary has the/every nice sister

There is a whole line of semantic literature devoted to this problem, which is intimately connected to the view, widely assumed in formal semantics, of relational nouns like *sister* as transitive nouns, i.e. nouns with two arguments, in contrast to sortal nouns like *car*, which are analyzed as one-place predicates. Discussing this literature, together with the analysis of relational nouns it is based on, will be one of the major tasks that I will undertake in this dissertation.

The two challenges that I have outlined make up the bulk of this work: my chief concerns will be to explicate how *have*-sentences get an interpretation and why they are sometimes associated to a definiteness effect –and this will make it necessary to spell out what exactly this effect amounts to. There is, however, a third issue related to *have* which has also generated a vast literature: the fact that its uses go well beyond simple sentences like (1)-(3). *Have* can, for instance, be used with eventive nouns, like in (5), and then the sentence does not assert a relation between two concrete entities, but rather that the subject participated in a certain event. In other cases, *have* takes objects with an internal predicative structure, whose predicate can be a prepositional phrase (PP), an adjectival phrase (AP), or a non-finite verb, as in the examples in (6).

(5) John and Mary had a party/a shower

(6) a. John has his car in the garage
b. John has his child sick
c. John has the kids running around
d. John has Mary do his homework
e. John has his homework done

Have is also recruited for functional roles such as that of auxiliary for compound verbal tenses, and to express deontic modality.

(7) Mary has/had read the newspaper

(8) Mary has to read the newspaper

The uses of *have* illustrated in (5)-(8) are not a quirk of English: languages which have a *have*-verb[2] at all tend to extend its use to a similar set of functions as the ones described here for English (see e.g. Heine (1997) or Stassen (2009, 2013)). I will not develop in this dissertation a comprehensive semantic analysis of *have* that encompasses all these uses: as I said, I will focus on the simplest cases, where *have* takes a simple NP as an object. Nevertheless, I will take it as a guiding principle that the resulting analysis has to be compatible with at least a subset of the data in (5)-(8). This is something that sets this dissertation apart from most of the existing literature on the same topic.

The main idea behind the analysis that I will put forward is that *have* introduces an unspecified stative relation between its subject and its object. This empty verbal template can be given content in several ways, and this determines the different readings *have* sentences may end up conveying.

If the object of *have* is a **relational NP**, the relation is entailed by the nominal. I will analyze (contra most of the literature) relational nouns as one-place predicates which entail a relation. The noun *sister*, for instance, entails a *siblinghood* relation with another individual. A pragmatic principle on the introduction of relational nominals into the discourse makes sure that, with discourse-new relational objects, the *have*-sentence unambiguously conveys the relation entailed by the relational noun.

By contrast, if the object is a **sortal NP**, the nominal does not entail a relation that *have* can absorb. My approach will be based on considering what *kind* of things the object and the subject NPs in the *have*-sentence are taken to be an instantiation of at a certain point in discourse. Our world knowledge then provides us with a relation that generally holds between instances of these two kinds. This relation will supply *have* with a content. To illustrate this idea, let us consider again (1a), repeated here:

(9) Mary has a new car

This sentence can be understood in a different way depending on whether we are talking about Mary as a regular adult person, as a police officer, as a car racer, or as a kid who likes toy cars. Each of these type of individuals have different relations with realizations of the kind *car*, and these are the relations that *have* with sortal NPs can be used to convey.

[2] I consider a *have*-verb a transitive predicate used to express 'possessive' relations (loosely understood) with the 'possessor' as the subject and the 'possessee' as the object. About 25% of the languages of the world have such a verb (Stassen (2013)). The most usual strategy for expressing possessive sentences is using a copula with some sort of oblique marking of the possessor or the possessee; I will not be concerned with these alternative strategies of expressing predicative possession (although I will briefly refer to the alleged complementarity between *be* and *have* in sections 1.3.9 and 5.3). That said, I will focus on the use of *have* in English, but I will occasionally use data from other languages. I will not attempt a systematic comparison between the use of *have* in English and the equivalent verb in any other language (although see section 5.4 on some uses of *have* in Old Catalan and Old English).

There is thus one common thread behind *have*-sentences with relational and sortal nouns as objects: they introduce discourse referents whose existence in discourse is tied to their relation to another discourse referent.

In some cases, **context already provides a relation**. When this happens, *have* can be used to assert that this contextual relation holds between two entities. As an example, (10) is perfectly fine in a situation where a group of bicycles is being assigned to a group of people, e.g. a group of friends who are taking a bike tour around a city.

(10) John has the red one, and Mary that Cannondale over there

The context makes clear that John and Mary will be connected with two particular bikes by virtue of the relation that is established between bicycles and people that rent them for a few hours to take a tour. Unlike in the previous examples, the existence of the two relevant bicycles in discourse is completely independent of the subject of *have*. John and Mary have to be aware that their relation with the bikes entails that they cannot e.g. take them home, paint them, or sell them. Importantly, for (10) to be felicitous, this relation must part of the discourse context prior to its utterance; what the sentence does is establish a link between individuals through this relation. Therefore, in contrast to (1), (2), or (3), sentence (10) does not introduce a new relation into the discourse, but rather relies on one that is already there.

This dissertation is divided into five chapters. In **Chapter 1** I will review the semantic literature on *have*-sentences with simple NPs with relational and sortal nouns –what is frequently called the literature on 'existential-*have*'. I will point out some common assumptions that most of this literature shares, and I will call some of these assumptions into question: the transitive view of relational nouns, the view of the definiteness effect limited to relational nouns, and the simple opposition between indefinite and definite/quantificational determiners.

In **Chapter 2** I will re-examine the transitive view of relational nouns. I will review the data this distinction is meant to account for, and suggest that an alternative approach based on seeing these nouns as relation-entailing one-place predicates –subject to certain pragmatic restrictions– leads to better predictions and simplifies the semantic composition of *have* sentences. I will put forward a similar treatment for *have*-sentences with sortal nouns. The label 'presentational-*have*' will be suggested as a cover term for these two uses of *have*, and will be contrasted with 'contextualized-*have*' sentences, i.e. those where the relation comes from the discourse context.

Chapter 3 will zoom in on the full range of NPs that is found in *have*-sentences which allow for a presentational reading. I will show that the simple opposition between indefinite and definite/quantificational determiners assumed by most accounts does not adequately account for the data. We will see that there is a very clear parallelism between the NPs allowed as presentational arguments of *have* and those allowed as pivots in *there be* sentences, and that this parallelism extends to some shared syntactic and semantic particularities of both predicates. I will take advantage of some insights of the literature on *there*

be sentences to enrich my account of *have*, although I will argue that an analysis of *have* cannot be reduced to an extension of an analysis for *there be*.

Chapter 4 will be devoted to presenting a formal analysis of *have*-sentences in the framework of Discourse Representation Theory. Given the crucial ways in which *have* interacts with the discourse in which a *have*-sentence is uttered, a dynamic treatment will be necessary to understand how this verb works.

Finally, in **Chapter 5** I will present some further issues the analysis defended here points to. First, I will suggest that it can be naturally extended to other uses of *have*, e.g. with eventuality-denoting nouns and with objects with predicative material, and I will sketch some steps in that direction. Second, I will briefly comment on the relation between *have* and *be*, and I will put forward a few arguments against the view assuming that *have* and *be* are different surface realizations of the same underlying element, as has been often defended in the literature. Finally, although this dissertation deals with English *have*, I will outline how the analysis is compatible with *have*-verbs in other languages, and I will illustrate it with Old Catalan and Old English. These two languages use their *have*-verbs in a wider range of contexts that their present-day counterparts; I will show that my analysis is capable of predicting these uses.

Chapter 1

Review of the literature

1.1. Introduction

The workings of *have* are probably one of the issues that has given rise to the greatest amount of literature in modern linguistics. There is a wealth of analyses of *have* coming from all perspectives: typology, functionalist/cognitive approaches, syntax, and semantics. I could not possibly attempt to give a comprehensive summary of even a small part of this literature; such a task is not in the scope of this dissertation. Myler (2014) provides an extensive introduction to the literature on *have* with a mainly syntactic orientation, but covering other subfields as well. LeBruyn and Schoorlemmer (2016) is a recent review from a more semantic perspective.

I will, in this chapter, concentrate on the literature that is most closely related to the the aim of this work. Recall from the introduction that my main concern is, faced with pairs like that in (1), determining (i) how *have*-sentences are assigned an interpretation, and (ii) what triggers the definiteness effect when the object is a relational NP.

(1) a. Mary has a/the nice car
    b. Mary has a/#the nice sister

The use of *have* with a relational noun, like in (1b), was dubbed 'existential-*have*' by Keenan (1987), and this term has made some fortune in the literature. I will use it throughout this chapter –although I will suggest an alternative term with a different coverage in Chapter 3.

This chapter will be organized as follows. In section 1.2 I will introduce, in notional terms, the distinction between sortal nouns and relational nouns, and I will lay out the traditional approach to this distinction in formal semantics, which is based on a difference in semantic type; I will review in this respect the classic analyses of Barker (1995) and Partee (1997). I will then introduce some further distinctions within the class of relational nouns not considered by these authors, and then I will present the approach developed in

a series of papers by Carl Vikner and Per Anker Jensen (Jensen and Vikner (1996, 2011), Vikner and Jensen (2002) a.o.). Their approach has prompted a dialogue with Barbara Partee and Vladimir Borschev Partee and Borschev (1998, 2003, 2012), which has led to questioning some of the assumptions of the classic analyses, but without casting doubt on the difference in semantic type between relational and sortal nouns.

In section 1.3 the main hallmarks of the semantic literature on *have* will be surveyed, from the precedents (Milsark (1977), Barwise and Cooper (1981) and Keenan (1987)) to LeBruyn et al. (2016). Finally, in section 1.4 I will point at some issues left open in the literature, and I will argue that they stem from some of the assumptions that practically all authors make, namely the view of relational nouns as transitive nouns, their conception of the definiteness effect, and a too simplistic division between the NPs that trigger the effect and those that do not.

1.2. Relational and sortal nouns

It is standard in formal semantics to assume that the class of nouns is divided into two classes with different semantic types. On the one hand we have SORTAL NOUNS (Strawson (1959), Löbner (1985)) like *table*, *mug*, or *dog*. On the other, we have RELATIONAL NOUNS, such as *child*, *leg* or *weight*.

The difference between the two classes of nouns is that for predicates like *child*, *leg* or *weight* to be a true description of an entity, we must infer that there exists another individual to which the entity is connected in a certain way. An entity describable with *child* must be connected to two entities which are their parents; a *leg* must be connected to a body as one of the parts that make up this body; *weight* can only be manifested in concrete reality as an attribute of some physical entity. Sortal nouns are not subject to this requirement: an entity might qualify as a *table*, a *mug* or a *dog* irrespective of the existence of any other individual in the world.

Note that relationality and sortality are not a property of entities, but of *descriptions* of entities. As Barker (1995) already notes, there are sortal and relational nouns which are coextensive, e.g. day/birthday. The noun *day* applies truthfully to, say, the 8th of January. By contrast, *birthday* does so only in connection with another entity. If this entity is Elvis Presley, then *birthday of Elvis Presley* is also a true description of the 8th of January, but *birthday of John Lennon* is not (it is true of the 9th of October).

Relational nouns are usually divided into several sub-classes. The following list is from Barker (1995:8):[1]

[1]Partee and Borschev (2003) note a difference between the semantic and syntactic literature, on the one hand, and the functionalist/typological literature, on the other, regarding which 'possessive' relation is considered most prototypical. The syntactic and semantic literature from Chomsky (1970) onward tends to consider deverbal nominals the prototypical examples of nouns with argument structure; on this view, possessive relations involving sortal nouns need to be somehow supplied with 'extra' arguments. In contrast, the functionalist literature normally considers possession relations with sortal nouns the prototypical ones (see e.g. Stassen (2009: ch. 1)).

John's purchase	Derived nominals
John's child	Kinship terms
John's nose	Body part terms
The table's top	Generalized part-whole relations
The woman's pen pal	Arbitrary relational nouns

Table 1.1: Classes of relational nouns (Barker (1995))

The difference between sortal and relational nouns described so far is a notional one. This notional difference has been argued to be relevant for natural language: languages have constructions which exclude one of the two types of noun. It has become standard in formal semantics to capture this difference in terms of semantic type: whereas sortal nouns translate as one-place predicates, i.e. properties (type $\langle et \rangle$), relational nouns correspond to two-place relations (type $\langle e, et \rangle$). Sortal nouns can thus also be thought of as denoting sets of entities (*dog* denotes the set of dogs), and relational nouns as denoting sets of ordered pairs of entities (*leg* denotes the set of pairs of entities such that one is the leg and the other one is the body, connected by the *leg-of* relation):

(2) Sortal nouns:
   a. $[\![\text{table}]\!] : \lambda x.\mathbf{dog}(x)$
   b. $[\![\text{mug}]\!] : \lambda x.\mathbf{mug}(x)$

(3) Relational nouns:
   a. $[\![\text{child}]\!] : \lambda x \lambda y.\mathbf{child\text{-}of}(x)(y)$
   b. $[\![\text{leg}]\!] : \lambda x \lambda y.\mathbf{leg\text{-}of}(x)(y)$

Following common practice, I will refer to the internal argument of relational nouns as the 'possessor' argument (although it normally does not denote a 'possessor' in the strict sense)[2] and to the external one as the 'referential' argument.

Partee and Barker focus on nominal possession, that is, on NPs like *Mary's computer* or *the sister of John*. In the following section I will review their accounts, in order to illustrate why they put forward a difference in logical type between relational and sortal nouns to account for the interpretive differences between different types of possessive NPs, and how they deal with the compositional challenges stemming from this distinction in logical type.

1.2.1. Classic approaches to nominal possession and relational nouns: Barker (1995), Partee (1997)

Barker (1995) and Partee (1997)[3] are two seminal works on how the composition of pos-

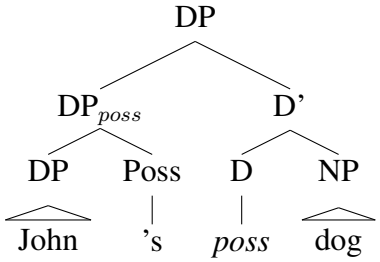
[2] I rely here on Löbner's (2015: 285) view: 'The referent of an NP with a relational nucleus can only be determined if the correlate is specified, or retrieved from context, or if the relational concept is shifted to an absolute concept. Explicit specification of the relational argument usually takes the form of a possessive construction, whence we will refer to the correlate as the possessor'.

[3] This work was published in 1997, but it had been circulating as a manuscript since 1983. The author

sessive NPs in English is built up with relational and sortal nouns. The literature sometimes calls them 'ambiguity approaches' (Sæbø (2009)): they assume that the type of the functional material in the possessive NP changes to accommodate nouns of different semantic type. They contrast with 'unified' approaches, in which the material in the possessive NP stays the same regardless of the relationality of the noun, such as Vikner & Jensen (e.g. 2002), which I will review in section 1.2.3. Despite sharing many similarities, Barker's and Partee's accounts differ both in scope and in analytical strategies.

Barker (1995) is couched in a Heimian framework, according to which NPs denote descriptions (of type $\langle e, t\rangle$) and the contribution of definite/indefinite determiners is dealt with on a later step. He assumes the following syntax for English genitive NPs:

(4)



When the possessor phrase combines with a relational noun, there can only be one interpretation, which is the one associated with the head noun. Barker calls these cases 'lexical possession'. The head of the DP (*poss*) is then argued to be semantically empty:

(5) $[\![\textit{poss}_{relational}]\!] : \lambda R.R$

When, by contrast, the possessor phrase is not a relational nominal, the possessive can express a wide array of relations, and we have what he terms 'extrinsic possession'. In these cases, the covert determiner *poss* has semantic content: it is a type-shifter turning a property-denoting noun into a relation-denoting one.[4][5]

(6) $[\![\textit{poss}_{sortal}]\!] : \lambda P \lambda x \lambda y.P(y) \wedge \pi(x)(y)$

The status of π deserves some discussion. It is meant to stand for an underspecified relation, which is 'a vague relation that encompasses ownership, creation, control, adjacency, and [a] variety of other distinct pragmatic relationships [...]. The use of an extrinsic possessive entails that the described entity is near to the possessor entity, where the relevant dimension for measuring relative nearness depends largely on pragmatic factors' (Barker

cites it as Partee (1983/1997). I will use here Partee (1997).

[4]Contrary to most of the literature, Barker assumes that the possessor is the external argument of relational nouns. His logical representation of *child* is $\lambda x \lambda y.\textbf{child}(x)(y)$, and for *John's child* it is $\lambda y.\textbf{child}(\mathbf{j}, y)$. His denotation for (6) is thus $\lambda P \lambda x \lambda y.\pi(x, y) \wedge P(y)$. In order to facilitate comparison between approaches, I will however use the usual order of the variables when referring to Barker's approach.

[5]Barker, following Heim, treats the definiteness that these phrases are normally associated with as a presupposition, just like in definite NPs. For authors working in standard model-theoretic semantics, the issue is more complicated. See next section.

(1995: 74)). According to this definition, it would seem that π is a constant, the ultimate value of which is not up to semantics to specify. However, Barker treats it more like an indexically-valued variable, comparable to a personal pronoun like *she*: 'so, just as an expression involving a free pronoun cannot be evaluated against a model until there is some assignment of variables to entities, an expression involving the possessive cannot be evaluated until there is some assignment of the possession relation to a particular extension. [...] [T]he extrinsic possession relation is treated as a variable over two-place relations whose value is fixed by the context of use.' (Barker (1995: 74-75)).

Regardless of whether π is to be interpreted as a constant or as a variable, in Barker's system the range of relations expressible by a possessive NP with a sortal noun is very wide: *John's table* can refer to the table that John owns, the one he likes, the one he sits on right now, the one he is watching over, the one he is always talking about, etc. Nonetheless, there are limits on the relations that can be expressed, e.g. **the tail's cat*/**the leg's table*.[6] Barker also suggests the constraint that in Western societies there is a tendency to interpret extrinsic relations primarily as 'possession'.

The relations expressible by sortal nouns are termed 'extrinsic' relations. They contrast with the relations expressed by relational nouns, which Barker names 'lexical'. *John's mother* or *Mary's leg* have an out-of-the-blue interpretation: they denote, respectively, the woman who gave birth to John and a part of Mary's body. In Barker (2011) extrinsic relations are labeled 'pragmatic', which is the term I will adopt. Barker's approach makes a very clear prediction: since the *poss* type-shifter, which is what introduces π into the formula, is part of the functional structure of prenominal possessors, these readings will not arise with postnominal *of*-PP possessives. This seems to be the case: the latter construction is only compatible with relational nouns, which contribute their own relations to the construction. The *of*-PP introduces the possessor argument of the noun.

(7) a. The sister of John
b. #The table of John

However, a pre-nominal possessive NP with a relational noun can also have a non-relational reading. *John's mother* can mean 'the mother that John is taking care of'. This use is allowed by a detransitivizing operator that can reduce the valence of the noun, achieving something similar to (8).

(8) $[\![\text{mother}_{detrans}]\!] : \textit{detrans}(\lambda x \lambda y.\textbf{mother-of}(x)(y)) = \lambda y \exists x.\textbf{mother-of}(x)(y)$

(8) can then be the input to *poss* above, whereby extrinsic relations can be derived (see Barker (1995: 55-59; 2011: 1114-1115) for details):

(9) $[\![\text{mother}_{sortal}]\!] : \textit{poss}([\![\text{mother}_{detrans}]\!]) = \lambda x \lambda y \exists z.\textbf{mother}(z)(y) \wedge \pi(x)(y)$

Barker's account is characterized by two features: (i) in possessive NPs with sortal nouns,

[6] In Barker and Dowty (1993) it is argued that this limitation is due to proto-roles operating on the nominal level; this is an extension of Dowty (1991).

the relation comes from the possessive morphosyntax, not from the noun itself or from the result of any requirement imposed by the construction (e.g. a requirement that the noun be previously transitivized), and (ii) potential relations associated with sortal nouns are dealt with through a vague predicate; for pragmatic readings the task of semantics is to provide a logical representation compatible with any interpretation the NP is allowed to have, but predicting/interpreting the actual relation conveyed by a particular possessive NP in a particular discourse is out of its domain of inquiry.

The approach by Partee (1997) shares these same two features. One difference between them is that, whereas Barker focuses on prenominal genitives, Partee broadens the scope to all uses of genitives such as *John's*, including predicative and postnominal uses. Essentially the same role that the covert *poss* has in Barker's account is attributed to the *'s* genitive clitic in Partee's. In addition, she does not assume a Heimian approach to NP semantics.

Partee notes the following contrast between sortal and relational nouns:

(10) a. John's team
b. A team of John's
c. That team is John's

(11) a. John's sister
b. A sister of John's
c. *That sister is John's

These examples show that predicative uses of genitives ((10c) and (11c)) are not allowed when the noun is relational, that is, when the noun expresses a lexical relation. Postnominal and prenominal genitives, in contrast, do not show this restriction. The fact that the predicative version of the genitive only allows for pragmatic readings, and not for lexical ones, is taken by Partee as evidence that we should preserve separate types for the two kinds of nouns. (12) shows the denotation of the predicative version of *John's*, where i stands for a contextual parameter, and summarizes the derivation of (10c):

(12) a. $[\![\text{John's}_{pred}]\!] : \lambda x.R_i(\textbf{john})(x)$
b. $[\![\text{team}]\!] : \lambda x.\textbf{team}(x)$
c. $[\![\text{that team is John's}]\!] : R_i(\textbf{john})(\textbf{that team})$

The denotation in (12a) can give rise to the postnominal *of John's*, with the free *R* reading, by standard type-shifting (from $\langle et \rangle$ to $\langle et, et \rangle$). *Of* is taken to be semantically empty.

(13) a. $[\![\text{of John's}_{free}]\!] : \lambda P \lambda x.P(x) \wedge R_i(\textbf{john})(x)$
b. $[\![\text{team}]\!] : \lambda x.\textbf{team}(x)$
c. $[\![\text{team of John's}]\!] : \lambda x.\textbf{team}(x) \wedge R_i(\textbf{john})(x)$

We obtain the prenominal version by combining (13a) with the definite article by function

composition, resulting in something like (14a):[7]

(14) a. $[\![\text{John's}_{pragmatic}]\!] : \lambda P \iota x.P(x) \wedge R_i(\textbf{john})(x)$
b. $[\![\text{John's team}]\!] : \iota x.\textbf{team}(x) \wedge R_i(john)(x)$

Predicative genitives never allow for inherent readings. Partee suggests (15b) as the representation of the postnominal of-PP with relational nouns,[8] and (16) as the prenominal version.

(15) a. $[\![\text{sister}]\!] : \lambda x \lambda y.\textbf{sister}(x)(y)$
b. $[\![\text{of John's}_{lexical}]\!] : \lambda R \lambda x.R(\textbf{john})(x)$
c. $[\![\text{sister of John's}]\!] : \lambda x.\textbf{sister}(\textbf{john})(x)$

(16) $[\![\text{John's sister}]\!] : \iota x.\textbf{sister}(\textbf{john})(x)$

Partee's denotation for the prenominal versions are essentially equivalent to the ones proposed by Barker, modulo the distinctions arising from the classical Montagovian framework used by the former and the Heimian one used by the latter. However, note that, in a way, the approach by Partee is more 'ambiguous' than Barker's. The role of the noun to which the genitive clitic is attached is always the same in Barker's analysis: it is an argument of a relation which is supplied by the D' sister to DP_{poss}. By contrast, in Partee's account it is an argument only if the noun is relational; otherwise it is a (relation-contributing) modifier of the possessed noun.

This is the basic view of possessive relations that most semantic accounts of *have*-sentences (i.e. predicative possession instead of nominal possession) on the market assume; I will review them in the section 1.3. Before doing so, I will (i) introduce some further distinctions within the class of relational nouns that need to be taken into account by an analysis of *have* –although we will see that most do not– and (ii) introduce the influential approach to nominal possession developed in a series of papers by Carl Vikner and Per Anker Jensen, which has been incorporated into some analysis of *have*.

[7] This is a simplification of Partee's interpretation for prenominal genitives. She proposed the following generalized quantifier for them:
(i) $[\![\text{John's team}]\!] : \lambda P[NP'(^\wedge \lambda z[\exists x[\forall y[[^\vee \textbf{team}(y) \wedge {}^\vee R_i(y)(z)] \leftrightarrow y = x] \wedge {}^\vee P(x)]])]$
(ii) $[\![\text{John's sister}]\!] : \lambda P[NP'(^\wedge \lambda z[\exists x[\forall y[^\vee \textbf{sister}(z)(y) \leftrightarrow y = x] \wedge {}^\vee P(x)]])]$
I believe this simplification does not violate the spirit of her approach.

[8] This particular analysis of postnominal genitives has been challenged and there are many alternatives to it (e.g. Barker (1998), Partee and Borschev (1998, 2003); see Barker (2011) for a review). The present section simply presents the issues any analysis of possession based on a type distinction between relational and sortal nouns has to face, so a systematic comparison of all these analysis would be beyond its scope.

1.2.2. Distinctions within the class of relational nouns

1.2.2.1. Relational nouns with very salient sortal interpretations

The notional distinction between relational and sortal nouns is intuitively clear, as are some of the tests designed to tell them apart. It is hard to deny that someone qualifies as a cousin only if their parents have siblings who in turn have children. It is odd to describe someone saying *she is a cousin* without providing the other argument of the relation. This noun behaves as we would expect from a relational noun given what we have seen so far:

(17) a. The cousin of Mary
b. #That cousin is Mary's

A noun like 'mug' represents the opposite case: there is no lexical relation between mugs and other entities, and the results of the tests are the opposite, as expected:

(18) a. #The mug of Mary
b. That mug is Mary's

But there are a lot of cases which are in a grey area between sortality and relationality. Take *teacher*, or *student*. In contrast to *cousin*, it is perfectly natural to say *she is a teacher/student*, or *this is a painting* without providing any possessor argument; in that sense, they behave like sortal nouns. However, they can take *of*-PPs, which would class them as relational, but on the other hand they are not downright incompatible with predicate genitives, and that should be taken as evidence that they are sortal:

(19) a. The teacher/painting of Mary
b. That teacher/painting is Mary's

Partee and Borschev (2012) summarize the situation: 'One pervasive fact about the distinction between sortal and relational nouns in many languages is the permeability of the boundary between them. The distinction is real: certain constructions clearly distinguish them. (Roughly: sortal nouns do not take arguments, relational and functional nouns do.) Nouns can often be coerced to cross the border, and some nouns like 'teacher' have robust meanings both as sortal and as relational nouns. The distinction is formally sharp, but the classification of nouns is not' (2012: 447). Partee and Borschev favor, throughout their papers on possession, the approach that these nouns have sortal and relational variants, whereas Barker (1995) opts to class them as relational –and rely on the detransitivizing type-shifter to derive the sortal version if necessary, just like with any other noun such as *mother*.

Note that these cases are different from cases like *child*, where the sortal variant differs in meaning from the relational one; unlike the relational variant, the sortal version entails youth. In the case of *teacher*, *painting* or *student*, the meaning does not seem to change (see Partee and Borschev (2003: 90-92)).

A somewhat related issue arises in connection to how much 'sortal content' a relational noun has (Löbner (1985)). Although the concepts *mother* and *father* are arguably as relational as it gets, in our society there are a series of traits associated to being a parent that make sentences of the kind *Mary is a mother/John is a father* informative without any need to introduce the possessor argument of the respective relations. That contrasts with *John is a brother-in-law* or *Mary is a cousin*.

1.2.2.2. Autonomous/dependent parts

Nouns denoting parts connected to wholes are one of the major subclasses of relational nouns. Vikner and Jensen (2002: 208-209) establish a distinction within this subclass between what they call 'dependent parts' and 'autonomous parts'. The idea is straightforward. Examples of dependent parts are *bottom*, *corner*, *edge*, *front*, *interior*, *surface* or *top*. Dependent parts are defined only in virtue of the relation they have with the whole: 'As a result of this property a dependent part cannot be recognized as being of a particular sort independently of the whole, e.g. a line seen in isolation is not an edge' (2002: 208).

Autonomous parts are nouns such as *engine*, *handle* or *wheel*; we could add body parts like *leg*, *hand* or *heart*. Parts of this kind 'may be recognized as being of a particular sort independently of the whole, e.g. an isolated circular object may very well be recognized as being a wheel' (2002: 48).

Dependent parts are, in a way, the clearest cases of relational nouns. To illustrate this, take *father*, a relational noun which is not a dependent part. One can describe a man with the noun *father* if the corresponding possessor argument is made available. However, the very same person can be described by countless other predicates. One can know the person without knowing he has children. It is clear that relationality is a property of the description *father*, rather than a property of the entities it can be applied to. The same can be said about autonomous parts, as Vikner and Jensen's example of *wheel*.

This is not true of dependent parts. The edge of a box is an entity that is defined only by virtue of its relation to the box. Its existence is not independent of the existence of the box, and it cannot be referred to in discourse without mention to the box it is a part of. The same can be said of *corner*, *surface*, *top*, and probably of related nouns such as *summit* or *slope*. In this case, relationality seems to be not only a property of these descriptions, but also a property of the entities they describe.

There is another set of nouns which behave in a way similar to dependent parts: deadjectival nouns denoting abstract properties like *redness*, *tallness* or *strength*; these have been called 'property concepts' (Dixon (1982); Koontz-Garboden and Francez (2010); Francez and Koontz-Garboden (2015, 2016)). According to Barker (2011: 1124) 'the part/whole opposition must be somewhat abstractly extended to conceive of properties as metaphorical parts of the objects that possess them (*speed*, *color*, *taste*, *age*)'.

Barker relates descriptions such as *the redness of the apple* to the notion of 'trope' (Moltmann (2004, 2009)), which means thinking of this description as 'the part of the apple that instantiates the *red* universal, with concrete existence independent from all the other properties of the apple' (Barker (2011: 1124)). There is no way of conceiving of this entity independently of the apple, in the same way as one can't refer to the entities denoted by *Mary's strength* or *Mary's tallness* separately from Mary. I will therefore treat deadjectival nouns as dependent parts in the same sense as *edge* or *bottom*. Summarizing, and in connection to the previous subsection, dependent parts have no sortal interpretations.

1.2.2.3. Functional nouns

In his account of definite descriptions in general, and bridging anaphora in particular, Löbner (1985, 1998, 2011, 2015) attaches great importance to the distinction between relational and functional nouns. The main difference between them is that relational nouns are one-to-many functions:[9] one can have zero, one or many sisters, children or friends; a house can have zero, one, or many windows or balconies.

Functional nouns contrast with relational nouns in that they connect individuals one-to-one. That is, for every human being, the functional noun *mother* picks only one individual. Examples of functional nouns given by Löbner are very varied, and include nouns such as *president, referee, driver, bride, height, age, weight, status, nationality, name, address, birth, death, beginning, hair*, or *blood*.

Löbner points out that, since the referential argument of functional nouns is necessarily unique, NPs built around them are only compatible with definite determiners (#*an age of John*), except in cases when what is discussed is precisely the existence of a referent. In such cases, which involve the verb *have*, the indefinite article or *no* are licensed (Löbner (1985: 297), his (4) and (5)):

(20) Does a makak have a tail?

(21) This car has no clutch

Relatedly, functional nouns with *have*-sentences give rise to rather uninformative statements, unless the relational noun is further characterized.[10]

[9]Löbner (1998:fn2) explains his use of the terms 'function' and 'functional': 'I am using the term *function* deliberately in both its technical, mathematical, sense (of a 1-to-1 relation) and in its everyday sense. If a category of objects is defined in terms of the function they have, or role they play, the category is functional in the technical sense, because any role or function is defined in terms of a 1-to-1 relation to other things-in-the-broadest-sense. For example, if I try to explain what a computer "mouse" is in terms of its function, I will relate it to the PC as unique part of its configuration. On the other hand, any 1-to-1 relation defines a role or function of the correlates w.r.t. the "possessor". For example, the "birth" of some person x is an event with a unique role in the life of x'.

[10]Of course one can use sentences such as (22a) and (23a) in a derivative sense, or to cause a rhetorical effect. This is exemplified by the following lines from the TV-series *Fawlty Towers*, showing a dialogue

(22) a. John has a father[11]
b. John has a nosy father

(23) a. This car has a steering wheel
b. This car has a very small steering wheel

The distinction between functional and relational nouns seems to be equivalent to what Heine (1997) calls 'obligatory' and 'optional' relations. He mentions Fez Arabic and Kabiye as languages with possessive constructions incompatible with nouns expressing obligatory (functional) relations. In those languages, sentences like (22a) and (23a) above would be not just uninformative, but also ungrammatical.

As already mentioned, Löbner's view is intended to be part of a theory of definites in general and bridging anaphora in particular. He defends that entities can be functionally related to a situation. In this case, their notional relationality status is immaterial. In Löbner (1985: 293) he provides the following example: *table* is a sortal concept. However, it plays a functional role in a living room: living rooms prototypically have tables. If a person just moved into a new apartment and is using a stack of three pallets as a table, she could welcome a guest by saying 'this is my table, please have a seat'; *table* is used here in a functional sense –and this is made clear by the fact that three stacked pallets would probably not satisfy the sortal description *table*.[12]

On Löbner's view not only situations, but also stages or kinds of individuals determine whether a relational noun is functional or not. *Hair*, one of the examples of functional nouns provided by Löbner, is functional with respect to young males, but not to old ones. That is, (24) is uninformative if John is 15 years old, but it is not if he is 70:

(24) John has hair

In a similar vein, the following sentence is informative if Valentino is my neighbor, but not if we are talking about Valentino Rossi and we refer to the bike he races with:[13]

---

between the hotel owner, Basil, and an American customer, Mr. Hamilton:

(i) a. Mr. Hamilton: Couldn't find the freeway. Had to take a little back street called the M5.
b. Basil: Well I'm sorry it wasn't wide enough for you. A lot of the English cars have steering wheels.

[11]Broekhuis and Keizer (2017) judge the equivalent sentence in Dutch with '*?'. They mention that the addition of 'nog steeds' (equivalent to 'still'), a restrictive modifier or an exclamative intonation (in which case they imply that the sentence is used to create a rhetorical effect) make it acceptable. The Catalan sentence equivalent to (22a) is uninformative, but I as a native speaker do not perceive it as ungrammatical or even as semantically anomalous; its just uninformative, in the sense that it states something that is obvious, and it qualifies as an odd conversational move in any context unless interpreted derivatively.

[12]This point of view can be contrasted with one that conceives of word meaning as a relative notion with fuzzy boundaries. Three pallets are certainly not a prototypical table, but they are not that far from this prototype. A pile of socks, by contrast, is too far from the prototype to license its functional use as *x's table*. Dynamic semantics is a framework that defends this fuzzy conception of meaning (see e.g. Boleda and Herbelot (2016)).

[13]The fact that this example is uninformative if the pilot is Valentino Rossi was pointed out to me by Alessandro Lenci.

(25) Valentino has a bike

The fact that whether a noun counts as functional, or as relational in general, depends on the situation and on the roles individuals play in these situations will be a key part of my interpretation of *have*-sentences in subsequent chapters.

Löbner (and, following him, Sæbø (2009) in his account of *have*) posits a logical type distinction between relational and functional nouns (the usual $\langle e, et\rangle$ for the former, and $\langle ee\rangle$ for the latter). Partee and Borschev (2012) agree that there is a notional distinction between relational and functional nouns, and present constructions that are compatible only with the latter; one of them is English 'parameter headed NPs as modifiers' of the kind *a dress that length/size/color/price*, which do not accept non-functional relational nouns (*#a dress that design/origin*). They do not, however, see the need for different semantic types. I will follow Partee & Borschev in not treating the difference between relational and functional nouns as one of logical type.

In this section I have presented the notion of relational nouns, I have introduced the basic compositional issues they pose, and I have presented significant ways in which the class of relational nouns can be subdivided. Before discussing the semantic analyses of *have*, I will present an account of relational nouns which has already popped up in this section: that developed by Vikner & Jensen for nominal possession, which has been subsequently adopted in some accounts of *have*. The main interest of this approach is how it conceives of relationality and their suggestion of a way to disambiguate the possessive relations that so far I have been calling 'pragmatic'. In Chapter 2 I will contrast their approach with that of Barbara Partee and Vladimir Borschev, who in a series of papers have defended some of the insights from Vikner and Jensen while rejecting others.

1.2.3. All (or at least most) possessors as arguments: Vikner & Jensen

Carl Vikner and Per Anker Jensen are the authors of a series of papers on nominal possession (Jensen and Vikner (1996, 2011), Vikner and Jensen (2002)) in which they developed an approach which has become very influential in semantic research on possession. It has been integrated by many researchers into accounts of *have*-sentences, as we will see in the next section. The core of this section summarizes their approach as laid out in Vikner and Jensen (2002).

Vikner & Jensen's approach differs from the 'ambiguity' approaches of Barker and Partee in two respects:

1. Genitives (e.g. *John's* or *Mary's*) are analyzed as unambiguously contributing an argument to the possessee noun. That is, both in *John's team* and *John's sister*, *John's* provides an argument of a relation. What this means is that in the case of sortal nouns, a type-shifter applies before combining with the genitive to relationalize them. That contrasts with Partee's idea of genitives as modifiers of sortal nouns, and with Barker's approach in which the type-shifter is *part of the denotation* of

a genitive NP. Vikner & Jensen posit that the noun has to be relationalized *before* combining into a genitive NP.

2. This does not just amount to positing that something like Barker's *poss* works as a type-adjusting mechanism instead of being part of the denotation of the functional material within the possessive NP. Vikner & Jensen propose a mechanism intended to narrow down the range of relations that a certain possessive NP is able to convey. They resort to the qualia structure of the possessee nominal (Pustejovsky (1995)) to provide the crucial information to yield an interpretation for R/π in Barker's or Partee's account.[14]

The qualia structure is part of the rich lexical representations proposed by Pustejovsky. It is one of four 'structures' or levels of lexical representations built into lexical items; the others are 'argument structure', 'event structure' and 'lexical inheritance structure'. Specifically, the qualia structure is 'the structured representation which gives the relational structure to a lexical item' (Pustejovsky (1995: 76)). It consists of four attributes:

- CONSTITUTIVE: the relation between an object and its constituent parts. Vikner and Jensen (2002: 205) propose to include in this quale the relation between an object and the whole it is a part of.

- FORMAL: that which distinguishes the object within a larger domain.

- TELIC: the purpose and function of the object.

- AGENTIVE: factors involved in the origin or 'bringing about' of the object.

Not all lexical items have a value for the four attributes, as illustrated by the following examples by Vikner & Jensen. The TELIC role, for instance, is limited to artifacts and –maybe– professions.

poem
Argument structure: $\lambda x.\textbf{poem}(x)$
Qualia structure:
TELIC: $\lambda x \lambda y.\textbf{read}(x)(y)$
AGENTIVE: $\lambda x \lambda y.\textbf{compose}(x)(y)$

nose
Argument structure: $\lambda x.\textbf{nose}(x)$
Qualia structure:
CONSTITUTIVE: $\lambda x \lambda y.\textbf{part-of}(x : body)(y)$

Note that in some cases, such as the CONSTITUTIVE qualia role of *nose*, there is a sortal

[14]The Generative Lexicon theory developed by Pustejovsky builds into the lexicon information that could be seen as belonging to world knowledge.

specification in one of the arguments. That requires the lexicon to be connected with a sort hierarchy. In fact, in V&J's system, the possessee (through the relations in its qualia structure, that is, the restrictions imposed by the relations that live there) is assumed to impose a sortal restriction on the possessor.

Vikner & Jensen suggest that there are two kinds of interpretations for possessives: lexical and pragmatic ones. The first ones are those than can be retrieved by the speaker 'out of the blue', without supporting context; the latter need contextual information in order to be interpreted. This suggests a parallelism with Barker's and Partee's type of approach: lexical interpretations are those that are associated with a qualia role, and the rest are pragmatic. However, this is not exactly the case.

Vikner & Jensen subdivide lexical interpretations into four types. Only two of them are associated with a qualia role: part-whole (associated with the CONSTITUTIVE qualia role) and agentive (associated with AGENTIVE). Inherent interpretations are associated with 'argument structure', which is a different level of representation. Furthermore, since a lot of possessive NPs have a very salient out-of-the-blue interpretation of ownership/control (e.g. *John's watch*), the subtype 'control' is added to lexical relations. The result is that V&J extend the notion of 'lexical' relation beyond Barker's and Partee's conception of such relations. The possible possessive relations in V&J's system are represented in table 1.2.

It might look surprising that Vikner & Jensen really only predict one more reading than Barker or Partee for genitive NPs: 'agentive'. Barker's subdivisions of the class of relational nouns (see table 1.1 above) are lumped together as 'inherent' relations, except for autonomous parts, which V&J assign to the subtype 'part-whole'. The rest of Barker's pragmatic readings are subdivided into 'control' (seen as a lexical relation) and purely pragmatic ones. This latter division solves the inconveniences posed by prototypically possessed nouns like *car* or *dog* in Baker's accounts. However, the fact remains that the only new prediction is that some possessors are predicted to be the 'makers' of the possessed nouns.

The TELIC role is not used as a possible value for possessive NPs. That is, although *chair* has a $\lambda x \lambda y.$**sit-in**$(x)(y)$ relation as the value for its TELIC role, *Mary's chair* cannot get a lexical interpretation corresponding to 'the chair Mary sits in'. This reading comes out indirectly, through a 'control' interpretation. The TELIC role is reserved for the interpretation of NPs with *favorite*: *Mary's favorite chair* does mean 'the chair where Mary likes to sit the most'. In (Jensen and Vikner, 2011: 115) they suggest that it is also useful to derive the interpretation of noun-noun compounds like *dog biscuit*, whose most salient reading is 'a biscuit suited for dogs to eat'.

The result is that, for *Mary's poem*, V&J predict that out of context it can have an agentive interpretation (the poem written by Mary) or a 'control' one. The latter could presumably correspond to things like 'the poem Mary has in her hands'. This would contrast with

Type of relation	Subtype	Definition	Associated Qualia role
Lexical	Inherent	Relations coming from inherently relational nouns, such as kinship terms or part-whole relations where the part cannot be described independently of the whole (e.g. *edge*, *front*, *corner*), i.e. 'dependent parts'.	(No qualia role. Associated to the level of representation 'argument structure')
	Part-whole	Relations where the part can be conceptualized as independent of the whole (*brain*, *hard drive*), i.e. 'autonomous parts'.	CONSTITUTIVE
	Agentive	Relations holding between an item and the agent that has created it. For *poem*, it would be the relation with the person who wrote it.	AGENTIVE
	Control	'The relation which holds between an animate being X and an item Y which X has at his or her disposal, being able to use or handle it' (Vikner and Jensen (2002: 196)). They include 'ownership' relations inside this group. The notion is somewhat vague, and they claim that 'Which particular variety of control is present in the situation described is not part of the semantic content of the genitive construction' (Vikner and Jensen (2002: 197)).	
Pragmatic		All other relations. Argued not to be interpretable without context. It presupposes that context contains information on the possessor, the possessee and the relation holding between them.	

Table 1.2: Types of possession relation (Vikner and Jensen (2002)

pragmatic interpretations like 'the poem that Mary likes most/has to translate'. It is unclear whether in such a case the control relation is easier to access without context than the pragmatic ones.

Another issue arises with the availability of agentive readings. Vikner & Jensen illustrate the agentive reading with nouns *poem*, *cake* and *snowman*. These nouns denote artifacts that can be easily produced by any individual in 'standard' circumstances. However, if one replaces them with other artifacts, even one as intuitively close to *poem* as *book*, it is already doubtful that the agentive reading is equally salient as the 'control' one (think of *the girl's book*), unless context tells us that the 'possessor' may be a writer. This is even clearer for other artifacts such as *table* or *computer*. Although this should be checked in corpora, there are reasons to be skeptical that an agentive interpretation of *x's table/computer* represents the proportion of total occurrences of such an NP that its saliency in Vikner & Jensen's system (being one of two possible lexical interpretations) predicts.

Admittedly, one can deal with this problem by building sortal restrictions in the value of the AGENTIVE-role: the external argument of the 'make' relation should be specified as something like *engineer* for *computer* or *carpenter* for *table*. But then the bulk of the work of providing an interpretation for the relation would be done by these sortal restrictions; the fact that the relation associated with a particular sortal restriction has a privileged status as a qualia role does not seem very relevant.

Let us use the NP *Mary's table* by way of example. This NP can have an agentive interpretation if one knows that Mary is a carpenter or dabbles in table-building. That is, a speaker will use this possessive NP if (i) the fact that we are talking about Mary as a carpenter is salient in discourse, and (ii) the 'make' relation is relevant enough in the context so that it can be used to refer to one specific table –and not to potential others. However, the same could be said about any other relation: if we know from context that Mary sells furniture, and this is somehow relevant, *Mary's tables* will naturally refer to 'the tables that Mary sells/the tables bought at Mary's store'. The point is that we do not need any more or any less context than in the agentive interpretation: the disambiguating work is done by any relation *table* can in general be associated with (they are built by someone, they are sold in furniture stores, they are used in study/work places, they are part of the stuff decorators work with, etc.) and the sortal restrictions on the arguments of these relations. Which relation is relevant depends on context, and it is not obvious that PART-WHOLE or AGENTIVE relations singled out by the qualia structure have a privileged status.

The other main feature of Vikner & Jensen's account is that it posits that all possessed nouns are relational, and this is achieved by a set of type-shifters that apply before the combination with the genitive. They are equivalent to Barker's *poss*, but with different versions for different types of possessive relations. Each version is connected to one of the four possible values (lexical or pragmatic) a possessive relation based on a sortal noun can have according to their account.[15] The following pairs show the type-shifters and the

[15]There is another type-shifter based on the TELIC qualia role, used in the cases involving the adjective

generalized-quantifier denotation for possessive NPs based on each of them:[16]

(26) a. CONSTITUTIVE → Co(*nose*) : $\lambda x \lambda y.$**nose**$(y) \wedge$ **part-of**$(x : body)(y)$
b. $[\![$A girl's nose$_{constitutive}]\!]$: $\lambda P \exists z[$**girl**$(z) \wedge \exists x[\forall y[$**nose**$(y) \wedge$ **part-of**$(z)(y) \leftrightarrow y = x] \wedge P(x)]]$

(27) a. AGENTIVE → Ag(*poem*) : $\lambda x \lambda y.$**poem**$(y) \wedge$ **make**$(y)(x)$
b. $[\![$A girl's poem$_{agentive}]\!]$: $\lambda P \exists z[$**girl**$(z) \wedge \exists x[\forall y[$**poem**$(y) \wedge$ **make**$(y)(z) \leftrightarrow y = x] \wedge P(x)]]$

(28) a. 'Control' interpretations → Ctr(*poem*) : $\lambda x \lambda y.$**poem**$(y) \wedge$ **control**$(y)(x : animate)$
b. $[\![$A girl's poem$_{control}]\!]$: $\lambda P \exists z[$**girl**$(z) \wedge \exists x[\forall y[$**poem**$(y) \wedge$ **control**$(x)(z : animate)$
$\leftrightarrow y = x] \wedge P(x)]]$

(29) a. 'Pragmatic' interpretations → Prag(*poem*) : $\lambda x \lambda y.$**poem**$(y) \wedge$ **related-to**$(y)(x)$
b. $[\![$A girl's poem$_{pragmatic}]\!]$: $\lambda P \exists z[$**girl**$(z) \wedge \exists x[\forall y[$**poem**$(y) \wedge$ **related-to**$(y)(z) \leftrightarrow y = x] \wedge P(x)]]$

Jensen and Vikner (2011) follow the same general approach as in Vikner and Jensen (2002), but they emphasize the relevance of the 'ontological types' of the relata in a possessive relation as a clue to solving the underspecification of their meaning. They use a system designed to handle a richer type-theory, in which entities of type e are given finer-grained sub-types such as *Human* or *Physical artifact*. The relations in the qualia roles are given types that reflect the ontological restrictions on their arguments; *snowball*, for instance, has an AGENTIVE qualia role with a verb *make* which, instead of type $\langle e, et \rangle$ is of type $(PA \rightarrow (H \rightarrow t))$, reflecting the fact that its internal argument needs to be a physical artifact (*PA*) and its external argument a Human (*H*).

The issues raised by the previous version of the analysis, however, remain. The toy NP they use as an example is again *Ann's snowball*, which is argued to contain an AGENTIVE quale which will give it a very salient agentive reading. They do not consider other artifacts such as *Ann's car* which do not have this salient reading. Furthermore, the way it stands, the treatment does not make use of the strategy of enriching the specifications of the predicate *make* depending on the noun so that e.g. the external argument of the *make* relation in *car* has the type $(PA \rightarrow (Factory/Engineer \rightarrow t))$.

This enriched type-theory could potentially be used (although Jensen and Vikner do not do it) to fine-tune e.g. the interpretation of 'control' relations. For instance, at the time of writing these lines, there are two computers in the world I can call 'my computer'. I can say of either of them 'my computer is slow today', and people will understand what I mean without any context, so presumably they will interpret that there is a lexical relation

favorite, which I will not discuss.

[16]The resulting generalized quantifiers also capture the definiteness of the resulting possessive NP, something I do not discuss here.

connecting me to both devices. Like most human beings, I can't 'make' a computer; the AGENTIVE interpretation is out. In both cases, then, my relation with them is one of 'control'. I certainly have both of them at my disposal, and anyone wanting to use them needs my permission.

However, the relation I have with each of them is very different. One is a laptop that I legally purchased from a store; I can take it wherever I want, I have to pay for any repair it needs, and I could give it away if I wanted to. The other belongs to Universitat Pompeu Fabra; some people would not be pleased if I took it home or I gave it to a friend as a present, and in turn I would not be happy with having to pay the bill when it needs fixing. There could be a way in Jensen and Vikner (2011) to integrate this information e.g. by using the different type I instantiate in each relation: something like 'regular adult individual' in relation to my personal laptop, and 'worker at a university' in relation to the computer in my office. They don't suggest that possibility; the only requirement is that whatever the type I instantiate in discourse, I end up being a subtype of 'animate', because that is the requirement of the 'control' relation. As long as I am 'animate', a (vague) control relation can obtain.

It can of course be claimed that this kind of disambiguating job is not part of the task of semantics. It is, however, a concern of computationally-oriented models like Pustejovsky (1995: 40) or Asher (2011), among many others. The account I will suggest in chapter 2 will use this information –what is the type that the possessor instantiates that is relevant in discourse– to posit a mechanism to disambiguate possessive relations beyond all-encompassing notions such as 'control'.

Summing up, Vikner & Jensen's approach to the semantics of possessives NPs is characterized by (i) their claim that the relation expressed in a possessive construction (in their case, limited to prenominal genitives) *always* comes from the possessee, which needs to be relationalized (shifted from an $\langle et \rangle$ to an $\langle e, et \rangle$ type) if it is sortal; and (ii) which kind of relation holding between the arguments can be (at least partially) predicted by conceptual information associated with the possessee. These two insights (not necessarily together) have been used in several semantic accounts of *have*-sentences. I will review them in the following section.

1.3. Semantic literature on *have*

1.3.1. Precedents: Milsark (1977), Barwise and Cooper (1981)

The very notion of existential-*have*, and the definiteness effect it is associated with, rests on the idea that there is some parallelism between the object of *have* and the pivot of existential sentences. The first semantic analyses of the definiteness effect in English existential sentences sought to characterize two classes of NPs, those that were felicitous as pivots ('weak NPs') and those that were not ('strong NPs'). The literature on existential constructions has mostly left this sort of binary approach behind (see e.g. McNally (2016a, b)). However, as we will see, the original accounts of the definiteness effect still lie at the heart of the majority of the analysis of existential-*have* that will be reviewed in

this section.

In his account of the English existential construction, Milsark (1977) coined the term 'weak' determiner (those that form 'weak' NPs) to characterize the determiners that could occur in NPs which were felicitous as pivots in *there-be* sentences. They were contrasted with 'strong' determiners and NPs (definite, partitive and quantificational NPs), which were banned from this position. On Milsark's analysis, the existential predicate contributes an existential quantifier; interaction with strong NPs, which carry their own quantificational force, results in infelicity. Weak determiners, by contrast, do not carry their own quantificational force. These determiners are analyzed as cardinality predicates. Therefore, even though Milsark did not fully formalize his analysis, it amounts to explaining the definiteness effect in terms of semantic types: only property-denoting NPs (type $\langle et \rangle$), that is, NPs that can be used predicatively, are accepted as pivots of the existential construction.

Barwise and Cooper (1981) intended to improve on Milsark's characterization of the class of NPs that can occur in *there-be* sentences by providing a formal definition of what a strong determiner is (and characterize weak determiners as those which are not strong). They divide strong determiners into 'positive strong' (*every*, *each*, *most*, *both*, *the*, etc.) and negative strong (like *neither*). The formal definition they put forward is the one in (30), where *A* is the set denoted by the nominal complement to the determiner; *E* is the domain of entities in the model, ⟦D⟧ is the denotation of *D* and a 'quantifier' corresponds to a DP.

(30) A determiner *D* is positive strong (or negative strong, respectively) if for every model *M* = <*E*,⟦⟧> and every $A \subseteq E$, if the quantifier ⟦D⟧(*A*) is defined then *A*⊆⟦D⟧(*A*). (Or *A* $\not\subseteq$⟦D⟧(*A*), resp.). If *D* is not (positive or negative) strong, then *D* is weak. A strong (weak) NP is then headed by a strong (weak, respectively) determiner. (Barwise and Cooper (1981: 182))

This definition implies that, if inserted in the pattern in (31), strong NPs yield either tautologies or contradictions, whereas weak NPs yield contingent sentences:

(31) DET N is an N

(32) a. The boy is a boy (tautology)
b. Every boy is a boy (tautology)
c. Neither boy is a boy (contradiction)
d. Two boys are boys (contingent: true if there are two or more boys; false if there is one or none)
e. No boys are boys (contingent: true if there are no boys; false if there are)

Barwise and Cooper's analysis applied to existential sentences treat *there-be* statements with strong NPs as pivots as either tautologies or contradictions, thus giving rise to infelicitous statements –their infelicity stemming from them being uninformative. Their approach treats *there-be* sentences as expressing the property that every individual has,

roughly equivalent to the English predicate *exist*. The interaction of strong NPs with these universal property gives rise to a tautology. On this view, (33a) is infelicitous because (33b) holds no matter what:

(33) a. There is the/each/two of the boy(s) in the yard
b. The/Each/Two of the boy(s) in the yard exist

Contrastingly, (34a) is contingent because the truth-value of (34a) can vary depending on whether the model contains a boy or not:

(34) a. There is a boy in the yard
b. A boy in the yard exists

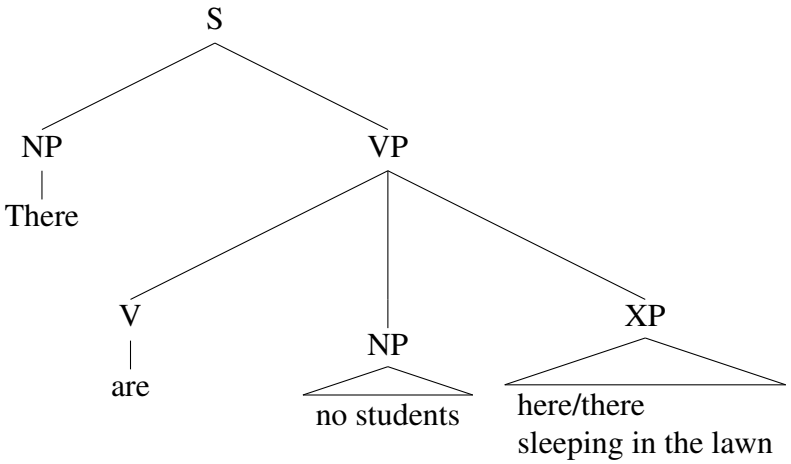
Barwise and Cooper's account was criticized on several grounds (see next section for Keenan's criticism, and McNally (submitted) for an overview). However, as we will see, it is still built into many accounts of the definiteness effect we see in *have*-sentences.

1.3.2. Keenan (1987)

Keenan (1987) takes issue with some of the assumptions under Barwise and Cooper's approach to the strong/weak distinction. A major problem he sees in Barwise and Cooper's viewpoint is that it considers codas in existential constructions as NP-modifiers, an analysis which does not accord well with syntactic constituency tests.

Instead, he assumes the following syntactic structure for English existential sentences (1987: 300):

(35)



Keenan assumes that *be* functions as a copula, and that *there* is semantically empty. The meaning of an existential statement thus has to be determined on the basis of the pivot and the coda alone: it will be true if the pivot has the property expressed in the coda. Note that this account requires there to be a coda. If the sentence does not have one, Keenan assumes that there is a covert coda denoting the universal property *exist*.

Keenan does not predict that NPs with strong determiners are infelicitous or ungrammatical. His claim is that they do not get an existential reading. His idea of what an existential reading is is similar to Barwise and Cooper's. It is also defined in terms of the universal property. An NP is existential if, when inserted in the pattern illustrated in (36), the two sentences give rise to the same truth conditions:

(36) a. There are two boys in the yard
b. Two boys who are in the yard exist

Strong NPs behave differently. (37b) is still an existence assertion, but (37a) is not: at most, according to Keenan, it is understood as a locative sentence.

(37) a. There are the two boys in the yard
b. The two boys who are in the yard exist

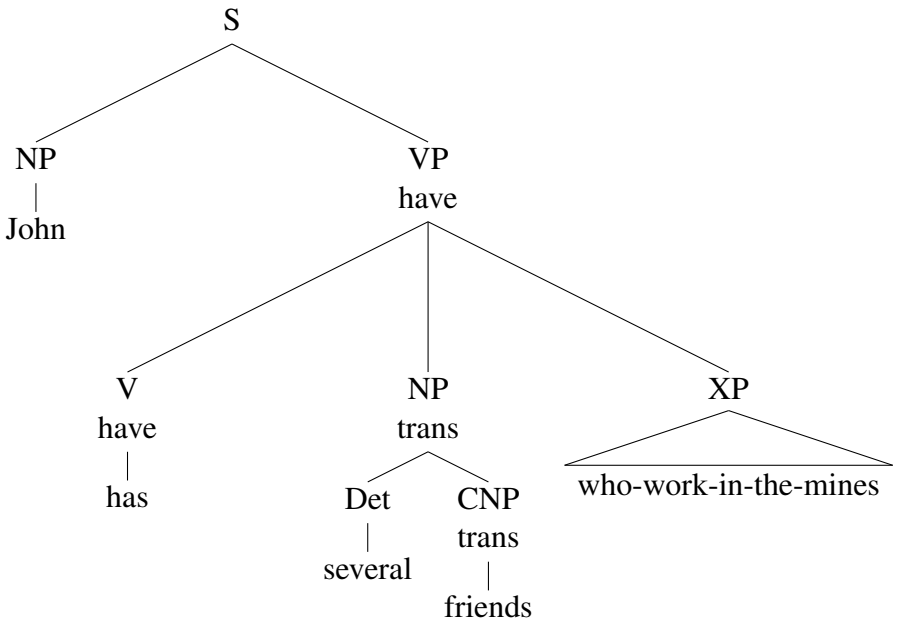
Note that, unlike Barwise & Cooper, Keenan does not predict that (37a) is infelicitous due to uninformativeness. He predicts that it has a reading which is not existential.

The account by Keenan is important because it is the first discussion in print which extends the possibility of having existential readings of NPs in the object position of *have*, for which he coins the term existential-*have*, that has been used ever since. Keenan assumes that nouns such as *friend* or *brother* denote two-place predicates: they need to combine with a full NP to yield an intransitive CNP (Common Noun Phrase). He observes that in *have*-sentences, this full NP is actually the one in subject position:

(38) John has several friends who work in the mines

The syntactic structure that he puts forward for *have*-sentences (1987: 306) is very similar to that proposed for *there-be* sentences. The main difference is that instead of a semantically empty, dummy element like *there*, we have a fully referential NP in subject position:

(39)



Although he does not provide an explicit semantic derivation, Keenan posits that since the subject of *have* is needed to saturate the internal argument of the NP *several friends*, it gets 'used up'. We are in the same position as we are with existential sentences: all we have to calculate the truth-value is the object of the sentence (equivalent to the pivot), of which the subject is an argument, and the XP. The sentence is true if the NP expressed in the object has the property denoted by the XP. That is, we end up with something equivalent to (40a), which will be understood as an existence assertion if it is true in the same conditions as (40b):

(40) a. Several friends (of John) work in the mines
b. Several friends (of John) who work in the mines exist

Keenan notices that both the determiners and the codas accepted in existential-*have* sentences are very similar to those accepted in *there-be* sentences. Strong NPs fail the test for existentiality:

(41) a. John has the/every/most friend(s) with long hair
b. The/every/most friend(s) of John with long hair exist(s)

A contrast between *there-be* and *have*-sentences is that the former could have locative readings with strong NPs, but Keenan's diagnostic for the latter with such NPs is 'ungrammaticality or semantic anomaly' (1987: 306).

Keenan (1987) is therefore the account that brought to the fore the similarities between a specific subset of *have*-sentences (those with relational nouns in object position) and existential sentences in general, and suggested an explanation of why the two types of sentences display a definiteness effect which is largely parallel. One of the potential criticisms this account has to face, which he himself acknowledges (and which also affects Barwise and Cooper) is that it considers as determiners sequences like *two of the* or *more*

of John than of Mary's, which do not belong to this class according to standard syntactic constituency tests.

Another problem for Keenan's account is that its explanation of the existential interpretation relies on the presence of a coda. It is true that existential sentences tend to have a coda, or that one can be very easily inferred from context, but most instances of existential-*have* sentences are perfectly fine without one. That is, there is apparently nothing wrong with (42a) and (42b) without any sort of contextual support; i.e., the two brothers of Mary in (42a) do not need to have any property for the sentence to be true.

(42) a. Mary has two brothers
b. Mary has more than three friends

One strategy to remedy this issue would be extending the covert *exist*-predicate that he proposed for existential sentences to cases of existential-*have*. He does not explicitly suggest this –although we will see that some more recent accounts based on Keenan adopt such a strategy, namely Sæbø (2009).

Summing up, Keenan framed the problem of *have*-sentences in a way that would be taken up by most of the subsequent literature.[17] The most urgent issue raised by this account was how to compositionally account for this need of the subject to fulfill a double role, both as the subject sentence and the internal argument of the relational noun. That is what Partee (1999) intends to explain.

1.3.3. Partee (1999)

Barbara Partee is not only associated with the research on possessive relations I have reviewed in the previous section. Hers is also the first attempt to provide a compositional interpretation of the facts identified by Keenan. Partee takes Keenan's observations at face value: there is a definiteness effect in *have*-sentences, it only affects relational nouns, and what needs to be accounted for is how the subject ends up saturating the internal argument of the relational noun. Partee's view is that 'it is "as if" the subject of the have-sentence is a moved instance of a quantified-in possessor' (1999: 7). That is, the underlying interpretation of (43a) would be (43b), and ultimately we would like to attain the logical representation in (43c):

(43) a. John has a sister
b. John$_3$ has a sister-of-x$_3$'s. Or: John is an x$_3$ such that there is a sister of x$_3$'s.

c. $\exists x.\textbf{sister-of}(j)(x)$

The conundrum is that, according to Partee, the object of *have* does not seem to be a predicative NP (type $\langle et \rangle$), which would explain the definiteness effect –the possibility of having determiners such as *few* or *exactly three* is taken as evidence against this line

[17] See also Gutiérrez-Rexach (2012) for an account which elaborates explicitly on Keenan (1987).

of analysis. Partee argues that the object of *have* cannot be understood as a regular generalized quantifier either: the determiners in these sentences do not take sortal nouns (of type $\langle et \rangle$) as arguments, but relational ones (type $\langle e, et \rangle$). Partee considers the possibility of treating the object NP of these sentences as a relational common noun phrase of type $\langle e, et \rangle$, with the determiner treated as a cardinality predicate. As we will see below, Landman (2004) implements a very similar idea. Partee rejects this analysis too because of (again) the possibility of having determiners like *few* or *exactly three*, and because such an approach would lead to complications with conjoined NPs of different monotonicity, as in (44) (her (15c)):

(44) John has a brother, two sisters and at most four cousins

Partee's solution involves devising a new type, 'unsaturated generalized quantifiers', which requires a relational version of determiners. These determiners take a relation instead of a property as their first argument, and return a function of type $\langle et, et \rangle$. They are derivable by the 'general rule' in (46):

(45) a. $[\![\text{a}_{regular}]\!] : \lambda Q \lambda P \exists x[Q(x) \wedge P(x)]$
b. $[\![\text{a}_{relational}]\!] : \lambda R \lambda P \lambda y \exists x[R(y)(x) \wedge P(x)]$

(46) If Det has a normal translation $\lambda Q \lambda P[\phi(Q, P)]$, i.e. ϕ, then its translation as a 'relational" Det is $\lambda R \lambda P \lambda y[\phi(R(y), P)]$

We thus get the 'unsaturated' version of a generalized quantifier:

(47) $[\![\text{a sister}_{unsaturated}]\!] : \lambda P \lambda y \exists x[\textbf{sister-of}(y)(x) \wedge P(x)]$

Have is given the following denotation. It is specifically designed to take this new type of generalized quantifiers (R is a variable over this type). As in Barwise & Cooper (1981) and Keenan (1987), *exist* stands for the property that holds of all entities in the domain:

(48) $[\![\text{have}]\!] : \lambda R[R(\textbf{exist})]$

Or, alternatively (following Beavers et al. (2009)):

(49) $[\![\text{have}]\!] : \lambda R \lambda y \exists x[R(y)(x) \wedge \textbf{exist}(x)]$

The presence of this predicate *exist* is grounded in the idea that *have*-sentences with relational nouns are a species of existential sentences. In Barwise & Cooper's account, the pivot denotes a generalized quantifier whose argument is this predicate *exist*. Strong NPs do not interact well with this predicate –they result in tautology or contradiction. The VP *have a sister* thus gets the following representation:

(50) $[\![\text{have a sister}]\!] : \lambda y \exists x[\textbf{sister}(y)(x) \wedge \textbf{exist}(x)]$

What this accomplishes is that the contribution of the subject to the meaning of the sentence will be providing the internal argument of the relational noun. Beavers et al. (2009) call it a 'raising' analysis of existential-*have*. In that sense, Partee claims that the λy in the translation of *have a sister* 'is not the usual subject-seeking argument, but is rather the abstractor that always accompanies a quantifying-in rule'. She herself acknowledges (1999: 7) that the approach might need more motivation.

As in Keenan's analysis, this approach is based on considering that the definiteness effect is strictly limited to relational nouns. This implies the view that sentences with sortal nouns do not undergo any meaning change depending on whether the object NP is a weak or a strong NP. That is, the only difference between (51a) and (51b) is whether the referent of the object NP is unique/familiar or not.

(51) a. John has a/many/more than two car(s)
b. John has the/most/each car(s)

This assumption has since been questioned in the literature (most clearly by Tham (2006)), and arguments signaling the fact that (51a) and (51b) get different interpretations have been suggested. This is a common weakness both in Keenan's and Partee's accounts: they make sure that, compositionally, only relational nouns can give rise to 'existential' readings and have any kind of definiteness effect. Sortal nouns should be completely unproblematic. But this does not seem to be the whole story: *have*-sentences with sortal nouns do give rise to meaning shifts depending on their strength/weakness, which neither account is able to explain. In the case of Partee, this is because they will never interact with the predicate 'exist', which is the ultimate source of the definiteness effect. A possible way out of this situation would be to claim that all nouns combining with *have* are relational(alized) –remember Vikner & Jensen from last subsection. This idea has been implemented in various ways, but it is specially clear in Beavers et al. (2009), which I will review in section 1.3.6.

Partee's analysis remains influential, and it has been the basis for some of the subsequent literature. If one adopts the idea that existential-*have* is limited to relational nouns, it is able to account for the data. However, it does so at a price: a new type of denotation for determiners and NPs needs to be stipulated just to account for the relevant data. What is more, such an analysis isolates a small segment of all the possible uses of *have*. If our goal is to try to cast light on why precisely *have* is used for so many different functions in language after language (or on the overlap of some of the roles *have* and *be* both intra- and cross-linguistically), positing ad-hoc types for some specific subsets of its uses might not be the best strategy.

Partee (1999) grew out from the abstract of a never-given talk written with Fred Landman in 1987. In the next section I will review an account of existential-*have* subsequently envisaged by Landman, which differs in significant ways from Partee's.

1.3.4. Landman (2004)

Landman's approach to existential-*have* sentences is built on different assumptions than the rest of the accounts reviewed so far. It is embedded in the author's own 'adjectival theory of indefinites'; I will follow his terminology in this section. According to Landman's theory, indefinites are always of type $\langle et \rangle$, and numerical phrases are set-denoting, intersective adjectives: definite DPs are generated in the type of individuals, and quantificational DPs (QDPs) at the type of generalized quantifiers over individuals (type $\langle dt, t \rangle$).[18] QDPs are infelicitous in predicate position; DDPs are felicitous in predicate positions but infelicitous in *there*-insertion contexts; whereas Indefinite Noun Phrases are felicitous both in predicate positions and *there*-insertion contexts. The idea is reminiscent of Milsark's original account of the definiteness effect, and it shares many features with accounts based on analyzing indefinite NPs as $\langle et \rangle$-type predicates, such as Van Geenhoven (1998) classic analysis of semantic incorporation.

Landman makes an observation which is surprisingly absent from the rest of the accounts. He notes that indefinite NPs headed by relational nouns are generally infelicitous except, precisely, in the object position of *have*, where they are accepted without any previous context:

(52) a. ?A sister came in
b. ?John kissed a sister
c. John has a sister

Landman also argues that definite NPs with relational nouns are better in out-of-the-blue readings with a verb like *kiss* (his judgment):

(53) a. ?John kissed/liked a sister
b. John kissed/liked the sister

The example in (53b) is fine because 'the relational argument needs to be supplied to get a normal NP or DP meaning. In the case of the indefinite, this needs to be done as an independent process; in the case of the definite, this process can be a natural part of the presuppositional interpretation we associate with the definite anyway' (2004: 197). Landman's judgment, however, can probably be called into question. Both (53a) and (53b) need context to supply a relational argument, irrespective of the presuppositional nature of *the*. If we know from context who the relevant sister is a sister of, both the definite or the indefinite article can be fine; the former will be felicitous if there is only one sister, and the latter will be if there is more than one, in which case it will receive a partitive interpretation. The remarkable observation to be made stems instead from comparing the pair (53a)-(53b) with the equivalent minimal pair using *have*, as in (54):

(54) a. John has a sister
b. John has the sister

[18] Landman uses *d* to represent the type of individuals

Again, if discourse provides an argument to the sister relation in (54b), the sentence will be fine. Note, however, that there is a very clear contrast between (53) and (54). In the first case, the meaning of *kiss* or *like* does not change depending on the definiteness of the determiner and the discourse factors involved. Both in (53a) and (53b), the sentence asserts that John performed an event of kissing/was in a state of liking someone. In contrast, the interpretation of *have* in (54) does change depending on discourse factors: if the referent of which the noun *sister* is true is already part of the discourse model when (54a) or (54b) are uttered, neither sentence can be taken to express a siblinghood relation between John and this entity. The sentence requires context to provide a salient relation. If there is no *sister*-entity in the previous context, sentence (54a) can only be taken to assert a siblinghood relation, and sentence (54b) will obviously be infelicitous because of the requirements on the use of *the*. This dependence on information-structural factors to determine the meaning of the sentence is a very particular trait of *have*.

Landman's analysis starts with the assumption that *have* expresses a 'possession' state. A possession state is defined by the thematic roles roles **Po** and $\mathbf{Th}_p$:

(55) $[\![\text{have}]\!] : \lambda y \lambda x \lambda s.\mathbf{Po}(s) = x \ \wedge \ \mathbf{Th}_p(s) = y$

Note that the state is not characterized by anything else than the fact that it relates entities with 'possessive' roles. The interpretation of a sentence such as *John has a dog* is as below. This analysis treats the indefinite article as superfluous, and looks essentially like semantic incorporation –although he reserves the term 'incorporation' for a specific operation that relational nouns undergo in this system (see below).

(56) $[\![\text{John has a dog}]\!] : \exists s[\mathbf{Po}(s) = \mathbf{john} \ \wedge \ \mathbf{dog}(\mathbf{Th}_p(s))]$

LeBruyn et al. (2013) argue that (56) is equivalent to (57), which looks like the result of applying Partee's analysis to a sortal noun which has been relationalized with the *poss* type-shifter.

(57) $\exists x[\mathbf{R}(j)(x) \ \wedge \ \mathbf{dog}(x)]$

When *have* gets an NP with a relational noun as an input, a series of things need to happen. Each step has a justification inside Landman's general theory, a fact which I will not discuss.

First of all, for *have* to combine with a relational-NP, it first needs to undergo a process of 'dethematicization': it loses its thematic roles, which was the only thing that characterized it as a possessive. It thus becomes a 'super-light verb', 'a trivial relation which does not have roles to assign' (2004: 204). The relational NP, in turn, undergoes an operation of 'scope-shift', that type-shifts it from $\langle e, et\rangle$ to $\langle e, \langle e, st\rangle\rangle$.[19] This operation is followed by one of 'thematicization' –it gets two roles A_1 and A_2 to assign. Thus the logical representation of 'sister' ends up as in (58):

[19]The *s* represents the type of eventualities.

(58) $\lambda y \lambda x \lambda s.s \in [\textbf{sister}] \wedge \mathbf{A}_1(s) = x \wedge \mathbf{A}_2(s) = y$

Then the 'thematicized' sister-relation (resulting from scope-shift and thematicization) intersects with the 'dethematicized' have-relation. The two relations have the same type, and they can combine through 'semantic incorporation', which for Landman is simple intersection. As a result of this intersection, we get to (59).

(59) $\lambda y \lambda x \lambda s.s \in [\textbf{sister}] \wedge \mathbf{A}_1(s) = x \wedge \mathbf{A}_2(s) = y$

This is equivalent to (60).

(60) $\lambda y \lambda x \lambda s.\textbf{sister}(y)(x)(s)$

The normal course of events would be for the $\mathbf{A}_2$ role to be assigned to the object. But in Landman's system the relational noun phrase has been interpreted as a thematic relation, and this means that the object is 'affected'. This entails that the object is not the first argument anymore. So we existentially close the object (and we remove it from the theta-grid, like in a passive), so the only argument that is left for composition is the subject. Landman says that the rethematicized relation is 'semantically passivized'.

(61) $\lambda y \lambda x.s \in [\textbf{sister}] \wedge \exists x[\mathbf{A}_1(s) = x] \wedge \mathbf{A}_2(s) = y$

This is equivalent (2004: 206) to $\exists x.\textbf{sister}(x, j)$.

It is hard to compare Landman's approach to the rest of the literature on existential-*have* because a lot of its assumptions and the semantic operations needed to make it work are designed as part of a specific theory –and the fact that it can account for existential-*have* cases is taken as support for this theory. However, the essential idea behind it amounts to the possibility that Partee (1999) suggests: making the object of *have* be of type $\langle e, et \rangle$, and treating modifiers as superfluous (in the case of *a*) or as cardinality predicates –although Landman does not give any example with a determiner which is not *a*– and existentially quantifying one of the arguments in the relation. In this case, however, the quantificational force does not come either from the verb or from the determiner, but rather from a semantic operation ('semantically passivizing' a 'rethematicized relation') on relational noun phrases.

Landman's analysis, however, makes use of an insight that has been applied in accounts of phenomena such as existential constructions, semantic incorporation and bare plurals: that of allowing property type-nominals, of type $\langle et \rangle$ to be the arguments of predicates. In chapter 3 I will consider the possibility of adapting an account of this type to *have* –although I will ultimately reject this possibility.

1.3.5. Tham (2006)

Tham's approach is not properly a compositional semantic account of existential-*have*-sentences to the same extent as the previous literature I have reviewed. Nevertheless, it makes an observation that will be crucial for my own account. As mentioned above, so far the analyses have treated pairs like in (62) as contrasting only in the discourse status of the object, but not in meaning.

(62) a. John has a beautiful car
b. John has the beautiful car

Tham questions this assumption. She argues that there are three different senses of *have*. One of them is associated to a pragmatic function of 'presentational focus' (typical of 'presentational verbs' in general), which justifies the definiteness effect, and this function affects both relational and sortal nouns. This use of *have* is called 'possessive':[20]

(63) Eliza has a/#the sister

(64) Eliza has a/#the mirror

Tham mentions the fact that there are contexts where definite complements to *have* are disallowed altogether:

(65) This is a good mirror – #Eliza has it

This definiteness effect affecting sentences like (63) or (64) is captured by building an *exist* predicate à la Keenan (1987) into the representation of *have*.

(66) have: POSS[+exist](x,y)

Although she does not provide an explicit derivation, and does not propose any treatment for determiners, Tham assumes that this sense of *have* can combine with both relational and sortal nouns. They give rise to the following representations respectively (the intermediate steps are not provided).

(67) $[\![\text{Eliza has a sister}]\!] : \exists x.\textbf{sister}(\textbf{eliza}, x)$

(68) $[\![\text{Eliza has a mirror}]\!] : \exists x.\textbf{mirror}(x) \wedge \textbf{control}(\textbf{eliza}, x)$

Sentence (68) illustrates the fact that Tham considers that instances of presentational-*have* with sortal nouns always convey 'control'. This reflects the intuition that relations between individuals and artifacts (and animals) expressible with *have*-sentences normally involve some sort of ability of the subject (which tends to be animate) to determine how

[20]Tham's terminological choice might be a little confusing here, since 'possessive' uses also cover relations coming from relational nouns like 'mother' or 'teacher', which would not be categorized as 'possessive' in most other accounts.

the object can be made use of. Examples in which this is not the case (think of 'have an aunt', 'have a problem' or 'have a cold') have nouns which are relational, so there is no need for a 'control' relation in order to interpret the sentence.

Keenan's explanation of the DE, which is adopted by Tham, depends on the object of *have* being relational. So one would have to assume that the sortal noun (here, *mirror*) has been turned into a relational noun before combining with *have*, through something like Barker's (1995) type shifter *poss*. Beavers et al. (2009) enrich Tham's account with precisely this feature (see next section). Keenan's account also needs an XP-constituent to interpret the sentence; Tham does not mention this fact.

The second sense of *have* is called focus-*have*. It depends on the presence in context of an 'open proposition'. This captured in the following representation:

(69) have$_{focus}$:
SEM-STR = R(x,y)
INFO-STR = $[_{OP}\lambda z.R(x,z)](y)_{focus}$

Tham presents the following example (which I have adapted) to show the difference between possessive-*have* and focus-*have*. Imagine a context where I have three gifts to give to three children, one of whom is called Andrew. This context creates an open proposition equivalent to 'X gets Y'. If someone asks 'What are you giving to Andrew?', this open proposition becomes 'Andrew gets Y'. I could then answer (70a) if more than one of the items I am planning to give away is a bike, or (70b) if only one is. There is thus no definiteness effect: the context provides a salient relation, and the information of the sentence is which entities are in this relation, irrespective of their discourse status.

(70) a. Andrew has a bike
b. Andrew has the bike

However, I could also answer (71) if I want to stress that Andrew is already a bike-possessor.

(71) Andrew (already) has a/#the bike, so I won't give one to him

Note that in this case *a bike* does not refer to one of the salient bikes in context. In (71) we are using the presentational version of *have*, which does have a definiteness effect.

There is still another version of *have*, which Tham calls control-*have*. It has the following representation:

(72) have$_{control}$: **control**(x,y)

This sense of *have* has no information-structural requirements, but imposes two conditions: (i) the subject has to be animate, and (ii) the object needs to have 'interpretational specificity'. The latter condition seems to amount to the requirement that it be entity-

denoting, and this contrasts with presentational-*have* with sortal nouns, in which Tham's analysis presupposes incorporation of the object nominal.

The use of control-*have* is exemplified in (73). Note that control-*have* does not simply amount to expressing 'location'. There is a requirement that the subject of the sentence be animate.

(73) a. –Where is the hammer?
b. –John has it
c. –#The upper drawer has it

To emphasize that the relevant relation is actually 'control', Tham sets up a scenario where groups of tourists are distributed among tour guides. In that context, (74b) would be infelicitous, since the continuation of the *have*-sentence entails that the subject does not 'control' the object in the relevant way.

(74) a. Where are the old ladies?
b. #I have them, but I can't seem to find them

Although data like (73) does isolate a subset of uses of *have* that needs to be accounted for, it is hard to tease apart whether the restrictions in this use spring from the fact that this relation is 'control' or from the information-structural requirements that the object needs to be somehow topical and specific. Remember that Tham uses that the same relation 'control' relation in cases of presentational-*have* with sortal objects. Recall that the representation of *Mary has a dog* on this account is (75).

(75) $[\![\text{Mary has a dog}]\!] : \exists x.\mathbf{dog}(x) \wedge \mathbf{control}(\mathbf{eliza}, x)$

However, in that case, we do not understand the control relation in the same way, since (76), modeled after (74b) above, is perfectly felicitous:

(76) Mary has a dog, but she can't seem to find it

Therefore, we might want to rethink whether it is exactly 'control' that is involved in one or both of these uses of *have*. What is more, we probably need a more refined characterization of what is entailed by a relation of 'control'.

Nevertheless, Tham's approach offers two insights that any account of *have* needs to incorporate –or explain away. The first is the fact that the definiteness effect does not affect only relational nouns: there are *have*-sentences with sortal nouns that show the effect as well. Although the arguments provided by Tham are not absolutely conclusive, I will argue that her point is valid and necessary. The second insight is that there are uses of *have* which are not subject to a definiteness effect, and that her division between focus-*have* and control-*have*, irrespective of how one ends up characterizing it, needs to be accounted for. And that is precisely what Beavers et al. (2009) intend to do.

1.3.6. Beavers et al. (2009)

Beavers et al. (2009) have a wider aim than most other semantic accounts of *have*. They identify a few contexts in grammar that express 'possessional semantics', and they claim that they are reducible to a unified analysis. These contexts are, aside from *have*, verbs *give*, *want* and *get* and possessive NPs.[21] Their goal is to extend Partee's analysis of existential-*have*, which only covers relational nouns, to all cases. Their immediate precedent is Tham (2006), who does something similar by suggesting that sortal nouns can enter presentational constructions with verb *have* by being supplemented with a 'control' relation, although, as we have just seen, she does not specify how this happens.

The similarity between *have* and *give*, *want* and *get* has been noticed in the literature for a long time. The main line of explanation has been to posit that the latter three verbs have an underlying possession component, which can be expressed with the following paraphrases (Beavers et al. (2009)):

(77) a. John wants the car ↔ John wants to have the car
b. John got the car ↔ John came to have the car
c. Mary gave John the car ↔ Mary caused John to have the car

Evidence for this view comes from the scope of durative adverbials (which sometimes modifiy the underlying *have* formative, illustrated in (78)), and, with *want*, from the fact that the *want* and the *have* eventualities can get different modifiers in the same sentence, illustrated in (79):

(78) a. John wants the car (for two days) ↔ (want or have for two days)
b. John got the car (for two days) ↔ (have for two days)
c. John gave me the car (for two days) ↔ (have for two days)

(79) a. On Monday, John wanted a car Tuesday (want Monday, have Tuesday)
b. #On Monday, John painted a car Tuesday

Further evidence comes from the fact that these three verbs allow for the same three readings that Tham identified in *have*-sentences (in the case of *give*, the possessed argument is the indirect object instead of the direct object. I omit the examples); note that alienable and inalienable possession belong to the same 'possessive' use of *have* in Tham (2006).

(80) a. John wants/got a sister (inalienable possession)
b. John wants/got a car (alienable possession)
c. John wants/got your car (for the weekend) (control possession)
d. John wants/got the windows (to clean) (focus possession)

[21] One could envisage ways to extend such an analysis to the group of *have*-verbs identified in the incorporation literature (e.g. Borthen (2003), Espinal & McNally (2011)), which includes verbs like *buy*, *wear*, *find*, etc.

Finally, these three readings are also the available ones in possessive NPs:

(81) a. John's sister (inalienable possession)
b. John's car (alienable possession)
c. John's car (for the weekend) (control possession)
d. John's windows (to clean) (focus possession)

Beavers et al. mention two major strands in the literature explaining how this *have*-component should be represented in sentence meaning. The first one, which they call 'lexicalist', has it that there is a basic predicate HAVE in the lexical decomposition of these verbs. Such an account is proposed by Dowty (1979), and Rappaport-Hovav and Levin (2008). On this view, *give* gets the following representation:

(82) give := [x CAUSE [z HAVE y]]

This approach is criticized on the grounds that, among all decomposition constants involved in the lexical decomposition of verbs (e.g. CAUSE, BECOME, etc), HAVE is the only one that does not have an overt manifestation in any language, so its presence as a piece of the meaning of some verbs is largely stipulated. Besides, the fact that the HAVE constant is part of the meaning of the verb does not help explain the parallelisms with possessive NPs.

The other type of account is the one positing a silent syntactic formative of the kind P_{have} in Harley (2004). On these accounts, each verb is the spell-out of the combination of this formative with a different verbal root. *Give*, for instance, is the result of adjoining P_{have} with v_{cause}. Beavers et al. provide several syntactic arguments against this view.

The authors suggest a third type of account which locates the possessive semantics in the possessed noun. The idea is that any NP used as an argument of a construction with possessive semantics, like *have*, *get* or *want*, *give*, or a genitive like *John's*, is type-shifted to a relational type. This comes down to applying a type-shifter like Barker's *poss* to turn one-place, sortal nouns, into relation-expressing nouns. The result of combining a sortal noun like *dog* with this type-shifter results in the same logical representation that Tham was arguing for in (68). However, they mention that the value of the relation does not necessarily have to be 'control'. It could be an unspecified relation, like Barker's π, or it could be one of the set of relations made available by Vikner and Jensen's (2002) approach (see section 1.3).

Thus Beavers et al. claim that their approach is similar to Barker's, but is compatible with lexical determination of the possible possessive relations associated with a nominal as in Vikner & Jensen's. The way it is implemented, however, seems closer in spirit to Vikner & Jensen's approach than to Barker's, in the sense that they argue for a unified analysis not only of *have* or genitive NPs, but for all constructions with possessive semantics. A precondition for such an analysis is that nouns enter these structures already relationalized. This is precisely what Vikner & Jensen argue for. Barker, by contrast, builds the type-shifter into the denotation of the genitive NP. This means that even for possessive

NPs, he is positing different versions of genitive NPs for non-relational and relational nouns –the former includes the type-shifter *poss*, the latter doesn't. If this were really the idea Beavers et al. are advocating for, they would have to posit at least two lexical entries for each of the verbs they analyze, one combining with nouns which are already relational, and another for verbs which are not.

Once they have established that *have* (and *give*, *want* and *get*) always combines with a noun of type $\langle e, et \rangle$, nothing blocks the generalized application of Partee's version of existential-*have* (see above). On Beavers et al.'s analysis all these verbs are raising/control verbs (2009: 169), in the sense that they 'take a complement with an unsaturated subject and identify that subject with their own'. Their syntactic analysis is formalized in Head-Driven Phrase Structure Grammar, and the semantic analysis (including an explanation of the Definiteness Effect which gets rid of the 'exist' predicate in Partee's account) in Minimal Recursion Semantics, so discussing their details would take us too far afield.

Beavers et al.'s account captures the interesting idea that the semantics of possession does not really depend either on the verb or the possessive morphology in a possessive NP, but rather on the semantics of the 'possessed' noun. However, it suffers from the same limitations when it comes to determining which possessive relations are available as Vikner & Jensen's. Full discussion of this issue will have to wait until Chapter 2.

1.3.7. Sæbø (2009)

The accounts reviewed so far attribute to *have* a role that could be defined as an empty verbal template: it takes any relation coming from the nominal it combines with and provides the scaffolding for this relation to reach the sentence level. Sæbø (2009) takes a different tack on the issue. On his account, the function of *have* does not have to do with being the vehicle for a relation. Roughly put, there is no λR or context/dependent π relation anywhere in the process of building a representation of a *have*-sentence. All postverbal material is instead analyzed as a small clause, that is, a full predicational structure, and the role of *have* is to abstract a variable from this small clause and link it to the sentential subject. Let us see it in detail.

Sæbø foregrounds a set of cases that the semantic literature on *have* tends to sweep under the rug: those where this verb does not combine with a simple NP, but rather with a predicational structure that is potentially analyzable as a small clause:

(83)
a. The beetle had the engine in the rear
b. She has all four grandparents alive
c. Shrek has a donkey for a friend
d. She has all her four grandparents alive
e. I have a spy aboard

According to Sæbø these data point to two 'problems':

- The 'pertinence problem': the subject of *have* must bind a variable in the small clause. This variable can be the implicit internal argument of a relational noun either in the subject or the predicate of the small clause: *engine* in (83a), *grandparents* in (83b), or *friend* in (83c). It can also come from a pronoun, like *her* in (83d) – note that in this case there is a relational noun but its internal argument is already saturated by the possessive pronoun, so the role of the subject of *have* cannot be reduced to binding the internal argument of relational nouns. The variable can also be more implicit, as in (83e), where it can come from *spy* ('a spy of mine') or *ship* ('aboard my ship')

- The 'redundancy problem': aside from binding this variable coming from the small clause, the subject of *have* does nothing else, it has 'no semantic role to play'. Its meaning is not assigned by the verb (it receives no 'theta-role'): it comes from the role the variable plays inside the small clause.

The solution to these two problems proposed by Sæbø is to analyze *have* as a lambda-binder. It transforms a set of states (the small clause) into a predicate of type $\langle et \rangle$, which will then be an argument of the generalized-quantifier-denoting subject. For the sentence to be felicitous, the small clause must contain a variable with index *i* for that λx_i variable abstracted by *have* to bind.

There is, however, a small twist. As it stands, the analysis would co-index *have* with its subject. To avoid that, the subject is quantifier-raised and the trace it leaves is absorbed by *have*. The binding of the variable coming from the small clause really happens by means of an abstractor introduced through the interpretation of quantifier raising. So *have* provides an abstractor without an index; the co-indexing is between the variable inside the small clause and the trace of the quantifier-raised subject. Then comes the abstractor introduced through the interpretation of quantifier-raised subject, and finally the GQ-subject. The schema is the following, where x_i is the trace left by the quantifier-raised subject and λx_i the binder introduced by the quantifier-raising operation (Sæbø (2009: 375)):

(84)

Q	λx_i	x_i	λx	[...x_i...]
She			has	all her$_i$ grandparents alive

What happens when there is no small-clause predicate for *have* to get the set of states it needs to perform its lambda-abstracting role? This can occur both with sortal and relational nouns.

(85) a. Mary has four sisters
b. John has a boat

Sæbø 's strategy is to posit that in these cases there is a covert small-clause predicate. In the case of relational nouns, this predicate is the property *exist* as in Barwise & Cooper and Keenan's analyses, and the definiteness effect is explained as in the account of the former of English existential sentences: a *have*-sentence with a relational noun heading a

strong NP would be either a tautology or a contradiction. Note that this strategy is similar to Keenan's proposal to use a covert 'exist'-predicate to explain the definiteness effect in English existential sentences, an analysis which depends as well on the presence of a coda. Positing it for existential-*have* sentences, which lack a coda much more frequently, is a natural extension of this type of account.

Cases without a relational noun do not have an *exist* covert predicate. Sæbø claims that in these cases 'a more substantial covert second argument, corresponding to the non-finite predicate in a full-fledged SC complement, is called for' (2009: 374). Potentially, it can be any predicate, but it is conventionally resolved as 'at one's disposal, in one's possession, or as part of one'.

This does not mean that Sæbø defends that any relation expressed by a *have*-sentence with a sortal noun is just an instance of one of these three vague predicates: 'When a Monopoly player 'has' houses or hotels she has them *in her possession*; the game 'has' houses and hotels in the sense that they are *on its board* and *in its rules*' (2009: 382). So the contextual specification of the relation is always resolved through a covert predicate containing a variable that can be bound by the subject. He relates the space of possibilities for these relations to a potential prototype structure, and makes explicit (2009: fn 7) that this space of possibilities is parallel to the range of possessive relations discussed in Heine (1997). The difference is that Heine posits variation in the possessive relation –and, relatedly, most of the other semantic accounts posit a vague relation represented as π o *R*–, whereas Sæbø posits variation in the sense of a silent predicate.

The latter point makes explicit an issue that the rest of the literature either does not discuss or delegates to Vikner & Jensen's approach (which is primarily designed to account for the interpretation of possessive NPs, not *have*-sentences): how exactly do we interpret *have*-sentences with sortal noun in context beyond a 'vague' interpretation? It is obvious that the relation between a person and a dog (as in 'John has a dog') or a chair (as in'John has a chair') are different. They imply many different things. In that sense, Sæbø is able to offer a finer-grained account than approaches based on an unspecified relation constant.

There are cases where we have sortal nouns (thus with no implicit argument) and overt small-clause predicates with no variable for the subject to bind.

(86) My mother has a boat in Lake Saratoga

In these cases, Sæbø suggests that there is a covert constituent like *belonging to her* in the sentence. It cannot be a small-clause predicate, because that seat is taken by *in Lake Saratoga*. The solution is to have it as modifier on the small-clause subject: the sentence is analyzed as 'My mother has a boat belonging to her in Lake Saratoga'. He even posits that one could extend this idea to all sentences with sortal nouns: the 'possessive' phrase that he treats as a covert secondary predicate could actually be a covert modifier, and the covert secondary predicate would be 'exist', as with relational nouns.

This move would predict, as in Tham in Beavers et al., that the definiteness effect holds as well for sortal nouns, which I see as a welcome consequence. However, it also uncovers the partially stipulative nature of the 'covert material' in the account: with sortal nouns, it is not crucial whether it is a modifier or a predicate, as long as the variable-containing phrase is there somewhere. This move, however, is bound to have syntactic consequences, even if everything happens covertly.

There are cases where it is difficult to predict where the necessary covert material for *have* to perform its function should be. The following example comes from the TV-series *Two and a half men*. The sentence is uttered in a context in which Walden, one the characters, has just paid for a ring that Alan, another character, will give to his fiancée Lindsey. Alan says (87) to Walden.

(87) Lindsey is very lucky to have a man like you in my life
Two and a half men, season 12, episode 14

This case has a playful ring to it, and this specific sentence is intended to be humorous, but it is definitely interpretable. One could of course posit that there is a covert modifier to *a man like you* such as *paying for her gifts* or, more generally, *caring for her*. But the more we move away from clear cases of possession, specially if the sentence already contains other modifiers, the choice of one modifier or another, or what their covert location exactly is, seems unmotivated, even if you take context into account. On the other hand, the fact that the covert phrase needs to be a modifier is not entirely clear; a non-restrictive relative clause ('a man like you, who cares for her, in my life') would make equal or more sense. But in this case it would be very unclear how the abstraction operation that *have* needs to get an interpretation would be carried out. The variable to be abstracted over needs to be inside the small clause, not in a non-restrictive relative clause.

Sæbø 's account is intended to be a unified account of all the uses of *have*, so the covert-small clause strategy has to account for the 'control' and 'focus' cases identified by Tham. Control cases with no overt predicate are easy to explain: the covert predicate is something 'in x's control, at x's disposal':

(88) a. Where is the hammer?
b. John has it (in his control)

However, there are control-*have* cases with both (i) a relational noun with its internal argument, and (ii) an overt secondary predicate containing possessed nouns fully saturated with a possessor other than the sentence subject. Imagine John gave me his car while he is on a trip, and I am responsible for taking care it. When asked by a third person on the whereabouts of the car, I could answer something like (89) to convey that the situation is under my control.

(89) I have John's car at Peter's house

It is difficult to find a spot for the covert material in (89). Let us say that it could be equiva-

lent to the slightly odd 'I have John's car under my control at Peter's house'. However, the same sentence (89) could also be used in a context where my intention is to convey that I do not have control over the car right now, because it is somewhere else. What would be the covert predicate in such a case? The upshot is, again, that it is far from trivial how to decide (i) where to plug the covert predicate in the sentence, and (ii) which is the content of this covert predicate which allows us to derive the right interpretation.

Summing up, Sæbø offers an appealing, unified account of *have* which does not shy away from discussing the relation between existential-*have* and the rest of the uses of this verb,[22] and it also looks deeper into how to disambiguate possessive relations with sortal nouns than any of the other analyses. It does however require heavy theoretical machinery (although that is not by itself a problem), and relies to a great extent on positing covert material. However, in this section I have shown that there are some *have*-sentences that are difficult to explain under this account.

1.3.8. LeBruyn et al. (2013)

LeBruyn et al. (2013) formulate their approach to existential-*have* as part of the wider research question of why *have*-verbs and the prepositions *with/without* take bare NPs relatively easily in languages that otherwise need determiners to license NPs. Norwegian, Greek, Catalan, Romanian and Spanish are cases in point. Take, for instance, the following pair in Catalan.

(90) a. La Maria té una germana
ART Maria has a sister
Mary has a sister
b. La Maria té casa
ART Maria has house
Mary has a house

Sentence (90a) is an example of existential-*have*, whereas (90b) is an example of what they call incorporation-*have* –the cases where *have* can take a bare singular NP as an argument. LeBruyn et al.'s (2013) account is guided by the following three principles: (i) the key to understanding why *have* easily takes bare singular NPs (as in (90b)) in languages in which this option is generally restricted is connected to its ability to introduce relations into the discourse (such as *sisterhood* in (90a)); (ii) *sortal* nouns, not relational ones, are the ones most frequently found in incorporation-*have* cases, thus casting doubt on the assumption that the relation that *have* introduces into the discourse needs to come from the nominal in object position; and (iii) the basic workings of *have* are the same cross-linguistically, with differences like the availability of incorporation-*have*, or the constraints this use is subject to (regarding e.g. the nouns that can appear as objects or the discourse-transparency of this object), stemming from language-particular factors.

[22] Sæbø's account also covers cases with participles as secondary predicates and links these cases with the perfect, something no other account reviewed up to this point does. He also offers and account of *with*. I have not considered these aspects of his analysis here.

Following (i) and (ii), this account takes an opposite direction from the rest of the analyses reviewed so far. We have seen that Keenan's or Partee's approaches involve treating *have* as a verb capable of taking relational nominals as arguments. Tham and Beaver's et al. extend this to all nominals: *have* only takes relational nominals. If the noun in object position is not relational, there is a type-shifter that relationalizes it (an idea inspired in Vikner and Jensen (2002)).

By contrast, what LeBruyn et al. suggest is that *have* always combines with $\langle et \rangle$-type arguments. This means that they need to assume that notionally relational nouns like *sister* need to have, along with their transitive logical representation, a detransitivized version of it, without getting into the details of how exactly they are related or whether one is derived from the other.

(91) a. $[\![\text{sister}]\!] : \lambda x \lambda y.\textbf{sister}(x)(y)$
b. $[\![\text{sister}]\!] : \lambda x \exists y.\textbf{sister}(x)(y)$

They also assume, following Landman (2004), that the article in sentences such as (92a) and (92b) is semantically empty. On Landman's account, it seems that any determiner different than *a* is interpreted as a cardinality predicate modifying the NP; LeBruyn et al. do not mention how to treat these cases. This amounts to considering that *a nice car* and *a nice sister* in (92) are of type $\langle e, t \rangle$, as would be the equivalent NPs without the indefinite article.

(92) a. John has a nice car
b. John has a nice sister

Having made all these assumptions, LeBruyn et al. (2013) suggest that 'instead of being a relation mediator, *have* actually builds relations [...] [W]e propose it selects one-place predicates and transitivizes them' (2013: 540). This 'transitivization' operation is carried out by an operator built into the logical representation of *have* that they put forward.

(93) $[\![\text{have}]\!] : \lambda P \lambda x \exists y(transitivize(P)(x)(y))$

This operator takes $\langle et \rangle$ predicates and adds 'a two-place predicate R that takes the argument of the input predicate as its second argument' (2013: 540). Essentially, this comes down to building Barker's *poss* type-shifter into the denotation of *have*. Let us use (90b), repeated here as (94), as an illustration of how this works. The object is here a sortal noun, *casa* ('house'), and has no article –but recall that the version with an indefinite article would not be different, as this article is taken to make no semantic contribution.

(94) La Maria té casa
ART Maria has house
Maria has a house

Glossing over the intermediate steps (see LeBruyn et al. (2013:540) for details), the derivation of (94) is as follows. The VP *té casa* is logically represented as in (95)

(95) $[\![\text{has house}]\!] : \lambda P \lambda x \exists y(transitivize(P)(x)(y))\ (\lambda y.\textbf{house}(y)) =$
$\lambda x \exists y.\textbf{house}(y) \wedge R(x)(y)$

After combination with the subject, the resulting logical representation of (94) is (96). Note that the *R* in the derivation has been pragmatically specified to *owned-by*.

(96) $\exists y.\textbf{house}(y) \wedge \textbf{owned-by}(\textbf{m})(y)$

What happens when the noun in the object NP is relational, as in the English sentence (97)? Recall that LeBruyn et al. assume that the indefinite article has to be factored out, and that *sister* translates as an $\langle et \rangle$ predicate.

(97) Mary has a sister

On these assumptions, we end up with the logical representation in (98) (see LeBruyn et al. (2013:541-542) for details):

(98) $[\![\text{Mary has a sister}]\!]$: $\exists x \exists y.\textbf{sister-of}(y)(x) \wedge R(\textbf{m})(x)$

This logical representation has the unusual feature that it asserts that a context-dependent relation R holds between Mary and an entity who is someone's sister –at this point, not necessarily a sister of Mary. LeBruyn et al. claim that, in most circumstances, the pragmatic specification of *R* will be, precisely, the relation *sister-of*, thereby achieving (99).

(99) $[\![\text{Mary has a sister}]\!]$: $\exists x \exists y.\textbf{sister-of}(y)(x) \wedge \textbf{sister-of}(\textbf{m})(x)$

However, *R* could take many other different values licensed by context. Mary could be, for instance, a baby-sitter in charge of one of the sisters of some other entity salient in the discourse. LeBruyn et al. take this double-specification of the relation as a desirable feature of their analysis, because it allows for this prediction.[23]

The fact that sentences like (97) can have a pragmatic interpretation which does not assert that Mary is in a siblinghood relation with the relevant entity is undeniable. However, there is a small twist in the data that LeBruyn et al. do not seem to consider. On their approach, this pragmatic reading arises by the exact same mechanisms that give rise to the 'relational' reading, i.e. that one which introduces a siblinghood relation into the discourse. It thus predicts that it will be subject to a definiteness effect as well. However, this is not the case: the pragmatic reading is not subject to this effect. Both (100a) and (100b) can express a pragmatic, context-dependent reading, but only the former can have a relational reading.

[23] Another factor LeBruyn et al. mention in favor of their analysis is that it yields the right interpretation for sentences like (i), which they claim is not correctly derived on the other analyses:
(i) Mary has the only lazy sister
I will not get into this part of their account (see LeBruyn et al. (2013: 543-545) for details).

(100) a. Mary has a sister
b. Mary has the sister

LeBruyn et al. (2013) do allow room in their analysis for 'non-presuppositional' definite articles in the object position of *have*, but the article in (100b) looks very much like the normal, presuppositional version of *the*. One could posit a type-shifting mechanism to turn the definite *the sister* in (100b) into an $\langle et \rangle$ predicate, but then one would need an explanation of why this option is not available when the reading is the relational one.

Summing up, although they end up resorting to providing them with extra arguments, LeBruyn et al. (2013) make the point that the oddity of *have* is not its ability to combine with nominals of type $\langle e, et \rangle$: on their account it combines uniformly with $\langle et \rangle$-type nominals. The analysis is thus related to Milsark's (1977) and Landman's accounts of existential and existential-*have* sentences, as well as with analyses of incorporation like Van Geenhoven (1998) and subsequent literature. It is also related, more indirectly, with the line of analysis of existential sentences initiated by McNally (1992), which I will review in chapter 2 as a potential candidate to explain why is it that makes *have* special. In section 1.3.10 I will review an updated version of this account by the same authors.

1.3.9. Myler (2014)

The scope of Neil Myler's (2014) dissertation is much broader than the rest of the accounts reviewed here.[24] Myler offers a syntactic and semantic account of what he identifies as the two main problems around which the literature on possession revolves. The first is what he terms the 'too many meanings' problem: languages tend to use their structures to express possession to cover a wide range of seemingly unrelated meanings, ranging from kinship or part-whole relations to expressing the involvement of the subject in an event (as in *John had Peter eat the cheese*).

The second problem is called 'two many surface structures': cross-linguistically, there are a variety of ways to express possession which nonetheless give rise to truth-conditionally equivalent meanings. According to Myler, all these strategies involve either a verb like *have* or a structure built around a copula. He places himself in the line of syntactic literature starting from Freeze (1992) and Kayne (1993) and assumes that *have* is how *be* is realized on the surface given some particular structural conditions. His account intends to explicate all the possible ways predicative possession can be expressed in a language.

Myler assumes an architecture of grammar along the lines proposed by Distributed Morphology (Marantz (1993)), according to which semantic interpretation is read off from the output of the syntactic component at LF. He also also defends a constructivist approach to argument structure: argument structures are not projected by predicates, but rather are realized in the syntax by the combination of roots with event- and argument-introducing

[24] Myler's dissertation has been recently published as a book (Myler (2016)). However, all the references here come from the 2014 version.

functional heads. Roots might impose restrictions on their surrounding structure, but do not project this structure.

This account relies on a special mechanism having to do with where and how an argument is given a theta-role. Arguments are introduced by functional heads. Whether a functional head introduces an argument as its complement or its specifier is determined in the syntax. However, on Myler's view, whether a head assigns a role to an argument is determined at LF, in the semantic component. A head can take an argument without assigning it a theta-role; this argument will get a theta-role later in the derivation from another head. He suggests a semantic operation that makes this possible, called *delayed gratification*. This boils down to allowing some terminal nodes to be 'semantically zero',[25] i.e. to denote a type-neutral identity function that allows a function to be passed up the tree so that saturation of one of its arguments occurs at a later stage in the derivation.[26]

My goals in this dissertation have to do with the 'too many meanings' problem, and with the workings of *have* from a semantic point of view. I will thus focus specifically on how Myler works out the meaning of *have*-sentences. He takes the stance that *have* denotes nothing: semantically, it is a type-neutral identity function. In this sense, it is like a copula. All possible variation in the meaning of *have*-sentences depends on the arguments of *have* and the functional structure that surrounds it. *Have* is argued to be the form *be* adopts when it is the complement of a Voice head bearing phi-features and a DP is merged in the specifier of this Voice head. *Have*, thus, becomes the transitive version of *be*.

Myler derives the fact that the relations expressible by predicative possessive sentences are so diverse from the fact that they form a syntactic class, but not a semantic class. What they have in common is that they originate DP-internally. Possessive relations are essentially nominal, an idea that harks back at least to Szabolcsi (1981), and which is also very clearly used in Beavers et al. (2009). Possessive DPs need to combine with meaningless *be* or *have* just to take these relations to the sentence level, but neither *be* nor *have* make any meaning contribution. The semantics for possessive DPs that Myler assumes is partially based on Barker's (1995) analysis. Relational nouns denote their own relations, and take possessors as complements. There are a variety of relations they can express, and these relations do not need to be seen as a unified semantic class.

Sortal nouns do not, by themselves, denote relations or take complements. Nevertheless, they can be the input to a Poss type-shifter (adapted from Barker (1995)). Myler, however, claims that the Poss type-shifter does not introduce a pragmatically-controlled relation,

[25]Myler claims that this operation is the LF counterpart of the fact, widely assumed in phonology, that some terminal nodes are 'ignored' at PF and realized by silent elements.

[26]This results in the teasing apart of the notions of syntactic and semantic argumenthood. This general goal lies, through rather different implementations, at the heart of the literature on semantic incorporation (e.g. Van Geenhoven (1998), Farkas and de Swart (2003), Chung and Ladusaw (2004), Espinal and McNally (2011)), and also in some recent syntactic and semantic literature on idiom formation (Cecchetto and Donati (2015), Gehrke and McNally (submitted)). Exploring the connections between all these different accounts, based on the fact that they all resort to trying to separate the notions of syntactic and semantic argument, is a major challenge for future research.

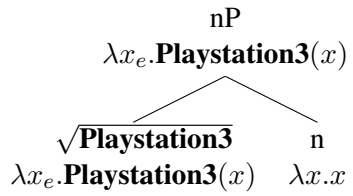
but rather is limited to expressing permanent possession. The difference is illustrated by the following pair.

(101) a. John has a Playstation 3
b. John has a key/the keys

According to Myler, sentence (101a) introduces a permanent possession relation, whereas (101b) introduces a temporary possession one. The latter case is given an analysis à la Sæbø (2009): a covert small-clause predicate is assumed to be present, which can be overt ('with him', 'in his control', etc).

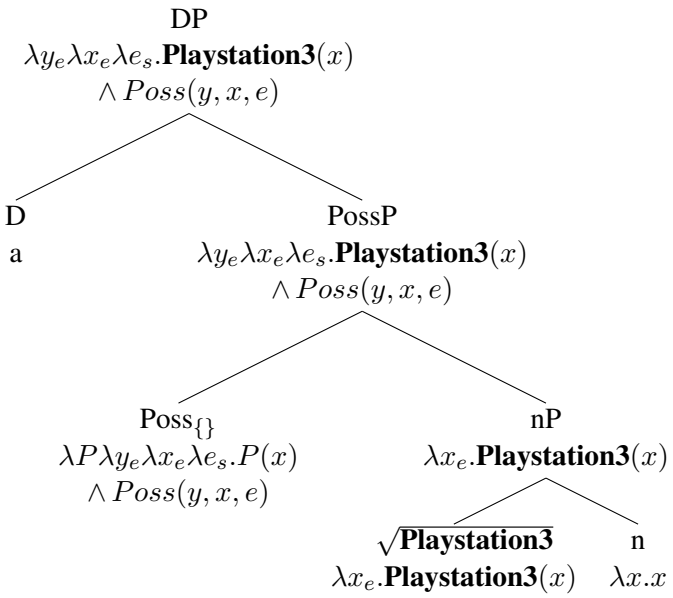
How this account works can be illustrated by going over the derivation of a sentence, like (101a), from Myler (2014: 369). This sentence expresses a permanent ownership relation between a Playstation 3 and John. Myler assumes that this relation originates DP-internally, but the saturation of the possessor argument takes place only when the subject of *have* steps in. This analysis, therefore, falls right on the path followed by Keenan (1987), Partee (1999) and Beavers et al. (2009), which try to put the possessor argument 'on hold' through the derivation so that the subject can saturate it in the end. Myler does this though the aforementioned mechanism of *delayed gratification*. Let us start from the object DP. Following the assumptions of Distributed Morphology, the root $\sqrt{\textbf{Playstation3}}$ combines with a nominalizing head n to yield a nP.

(102)



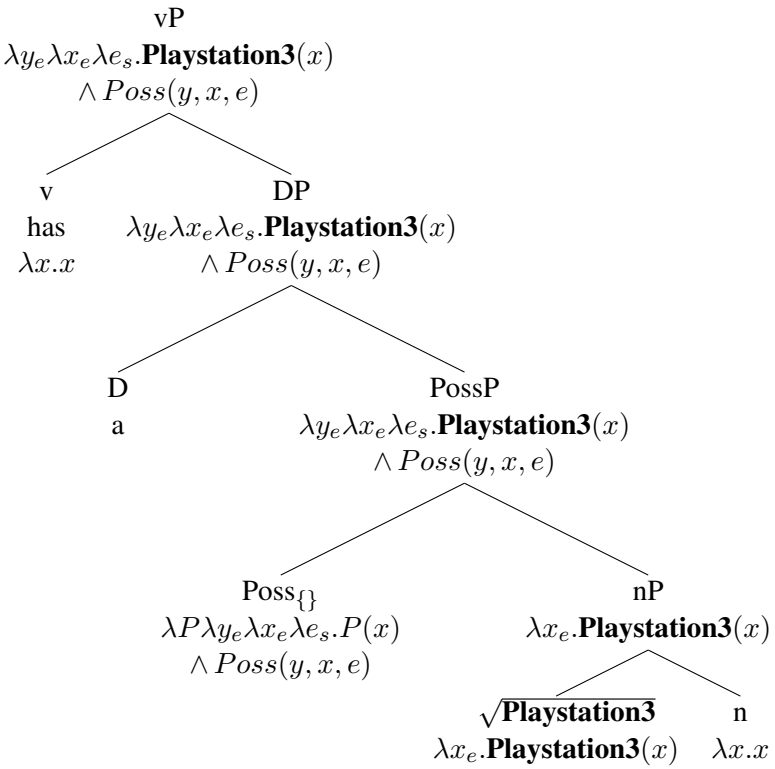
At this point, the Poss head applies to transitivize this nP and to introduce the permanent possession relation. If instead of $\sqrt{\textbf{Playstation3}}$ we were dealing with a relational noun, this step would not be necessary, because the relational noun would carry its own relation and possessor argument. Note that PossP is specifierless: the argument corresponding to the possessor is not introduced here. The indefinite article is taken to make no semantic contribution.

(103)



Now we have a DP with two arguments to be saturated. *Have* corresponds to a terminal node which makes no semantic contribution. It denotes a type-neutral identity function, so this same denotation passes up the tree.

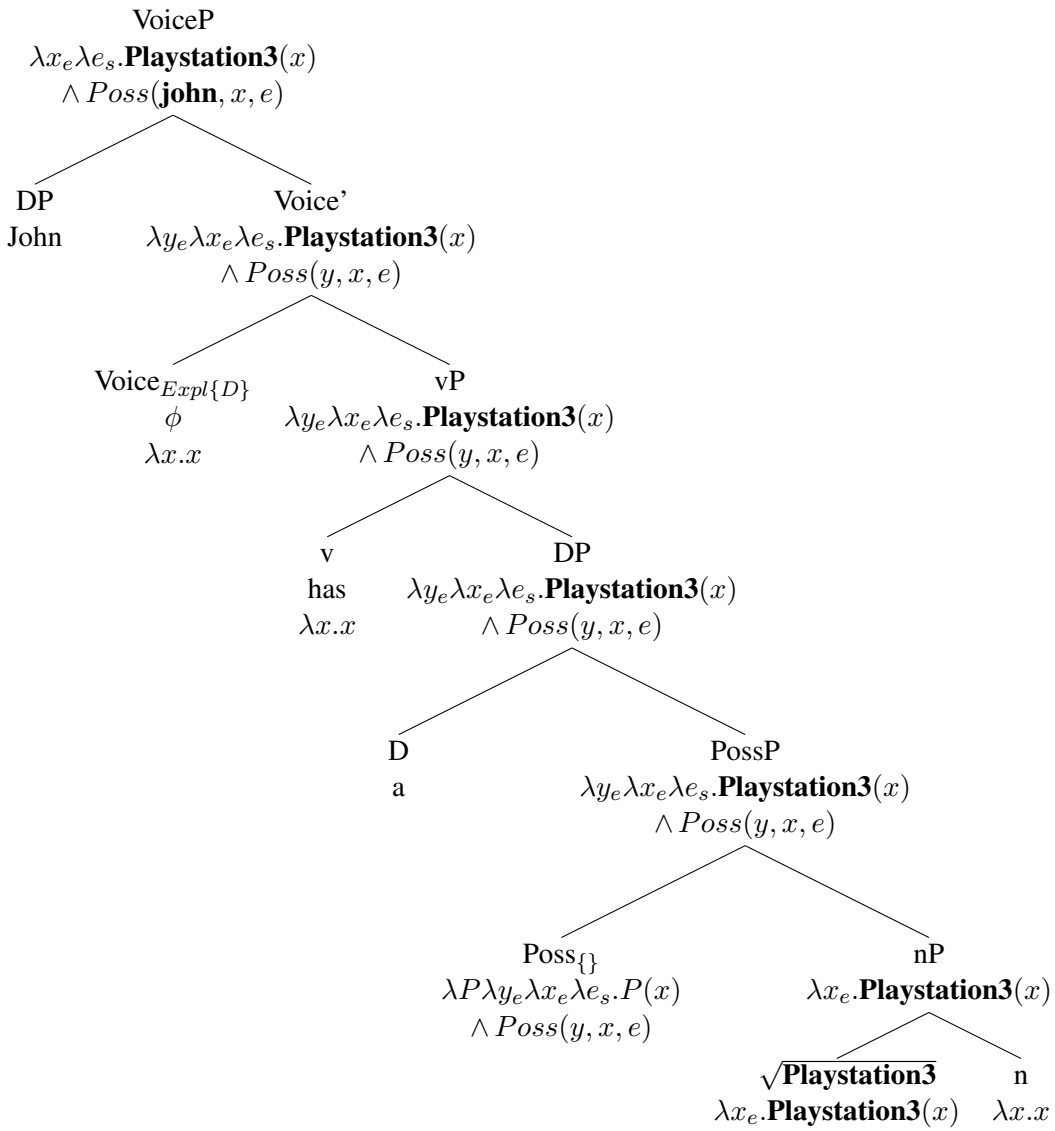
(104)



The reason why the v head has been realized as *have* instead of *be* is because the vP it heads becomes the complement to a Voice head. Myler argues that this is an Expletive Voice (which introduces no thematic role of its own), 'with the result that the DP in spec-VoiceP goes in for the possessor argument in that relation' (2014: 369-370). This is delayed gratification in action: after the denotation has been pushed up the tree through

meaningless terminal nodes, the possessor argument (coming from the Poss head) can be 'satiated' at this point (2014: 366).

(105)



Myler's account is not meant to explain only *have*-sentences with simple NPs as objects. The mechanism of delayed gratification is put to work when accounting for different kinds of possessive sentences in different languages which use *be* instead of *have*, and is also employed to explain most other uses of *have* in English. I am here limiting my comments to how this proposal deals with cases of *have* taking simple entity-denoting NPs.

There seem to be at least two potential issues with Myler's viewpoint. The first has to do with his claim that his account explains how *have*-sentences can mean so many different things by examining the denotation of the lexical items it combines with and the structures where they are inserted. When it comes to teasing apart possessive relations, this account does not actually do a better job than any other semantic account of *have* reviewed in this section. Some relations come from relational nouns, whereas other are derived through some other mechanism, like the Poss type-shifter. This is the usual strategy followed

by most of the other analyses. The only difference is that he combines this traditional account with one à la Sæbø, with covert small-clause predicates, to deal with the cases that Tham (2006) calls 'control'-*have* and LeBruyn et al. (2016) call heavy-*have* –although this renders his account vulnerable to the same criticism raised for Sæbø's.[27]

The other potential criticism that Myler has to face has to do with the status it gives to *have* as something between a copula and a transitive verb. Recall that *have* is analyzed as a *be* + a VoiceP. As a consequence of that, it is not straightforward for him to predict that (106a) and (106b) cannot exchange their meanings (2014: 228).

(106) a. John has a doctor
b. John is a doctor

Myler argues that the reason why *John is a doctor* cannot mean *John has a doctor* follows from the fact that whenever a copula takes a relational DP as a complement and the subject saturates the possessor argument of this relational DP, this subject is necessarily introduced as the Spec of a VoiceP, and this is what causes *be* to surface as *have* in the first place. This explanation is rather circular, but it can be argued to make sense theory-internally.

It is explaining why *John has a doctor* cannot mean *John is a doctor* that is more problematic for Myler. Nothing in his theory in principle precludes the possibility that the copula can take a predicate nominal as a complement and an external argument introduced by a Voice head, thereby forcing *be* to surface as *have*. To rule out this option, Myler has to stipulate that predicate nominals 'are licensed in a some special way, *before* Voice is able to probe them. This would make predicate nominals incompatible with transitive Voice, forcing 'v' to be spelled out as BE rather than HAVE' (2014: 230).

The relation between *have* and *be* is not a central concern of this dissertation. However, the analysis that I will put forward makes it clear that *have* is a (very special type of) transitive verb. It is not a copula in any sense. A transitive verb relates two referential DPs, each of which corresponds to a discourse referent. A copula relates one referential argument to a predicate nominal. The predicate nominal is predicated of the referential argument; it does not correspond to a discourse referent. That, alone, explains why (106a) and (106b) do not and cannot mean the same. Since Myler wants to treat *be* and *have* as

[27] One of the reasons Myler teases apart permanent and temporary possession is that the former seems to be subject to a definiteness effect, whereas the latter does not. That is, (i) is odd on a permanent possession reading, but it is not on a reading in which John is only circumstantially related to a blue car.
(i) John has the blue car/it
I agree with the fact that there is a definiteness effect in *have*-sentences with sortal nouns like *car*. However, Myler overlooks the fact that definite NPs or pronouns can get 'permanent possession' readings if you interpret these pronouns as kind-referring. Sentence (ii) can mean that John has a permanent possessive relation with a different token of the kind of car being talked about.
(ii) Do you see this cool car over there? John has it/That's the one John has
My own analysis of *have*-sentences will take into account the information on the kinds that the subject and the object are realizations of, and this will give a natural interpretation to examples like (ii). See Chapter 2 and Chapter 3.

essentially the same thing, the fact that *have* does not combine with predicate nominals does not come for free in his account. He claims that *have* is the transitive version of *be*, but this fact is contradicted by the fact that it can still work as a copula (i.e. it can combine with predicate nominals), and to rule out this possibility, Myler has to introduce extra assumptions (without strong independent justification) into the account.

One can certainly use a copula to relate two referential entities. A way to do that is by introducing an oblique marking on one of the arguments of a copular predicate. The copula can then relate a referential argument to e.g. a PP, and this PP can contain another referential argument. This is arguably how locative sentences work. It is also one of the possible strategies a language can use to establish 'possessive' relations between entities –and if we assume that, one does not need to conceive of *have* and *be* as the realization of the same underlying item. I will comment a little bit more on the relation between *be* and *have* in Chapter 5.

To sum up, Myler (2014) is one of the most ambitious analyses of possession in general and *have* in particular that can be found in the literature. Its scope is much broader than that of any of the other accounts reviewed in this section, and it also provides much more data. The scope of my analysis is narrower than his, and I cannot fully do justice to it here. However, if we focus on the interpretation of *have*-sentences with simple entity-denoting NPs as objects, it does not seem to go much further than any of the other available accounts. Like most of them, it relies on a special semantic mechanism (in this case, delayed gratification) to make the composition work –although he does provide reasons to adopt this mechanism beyond accounting for *have*-sentences. What is more, his assumption that *be* and *have* are different realizations of the same underlying element leads to some complications arising from the fact that *have* is argued to be something between a transitive verb and a copula.

1.3.10. LeBruyn et al. (2016)

LeBruyn et al. (2016) start off from the same set of assumptions as in their 2013 paper: there is a relation between incorporation *have* and existential-*have* in the sense that they both illustrate a main feature of this verb: instead of regular arguments (be they of type $\langle et, t\rangle$ or e), it combines with functional material (i.e. of type $\langle et\rangle$). The analysis, however, is modified in several ways. The main changes have to do with the source of the relation that the *have*-sentence ends up asserting, which does not rely anymore on the double-specification idea from LeBruyn et al. (2013).

In this paper, LeBruyn et al. also argue for an $\langle et\rangle$-type for all nouns (both relational and sortal nouns). Both kinds of nouns, however, come with implicit arguments, aside from the λ-bound, explicit ones. This move is allowed by the use of Dynamic Montague Grammar (Groenendijk and Stokhof (1990), Dekker (1993)). On this view, a sortal noun like *blog* and a relational noun like *sister* have the following representations:[28]

[28] LeBruyn et al's version of Dynamic Montague Grammar uses the following notation:

- ε, $\cong$ and : are the dynamic counterpart of $\exists$, $=$ and $\wedge$.

(107) $[\![\text{blog}_{dynamic}]\!] = \lambda x \varepsilon d_i(\uparrow \textbf{blog-created-by}(\uparrow d_i)(x))$

(108) $[\![\text{sister}_{dynamic}]\!] = \lambda x \varepsilon d_i(\uparrow \textbf{sister}(\uparrow d_i)(x))$

The variable x represents the sortal argument of *sister*. The other argument, as it stands, is 'implicit', and therefore not available for composition. Part of the semantic function of *have* is to make this implicit argument available through an operation they call 'explicitation'. It is the dynamic counterpart of the 'transitivize' operation in LeBruyn et al. (2013), which in turn is equivalent to Barker's *poss* type-shifter.

(109) $[\![\text{EXPL(P)}]\!] = \lambda x \lambda y(P(y); \uparrow d_n \cong x)$ (for any one-place predicate *P* including the implicit argument d_n where *n* ranges over i, ii, iii, iv,...) (2016: 53)

The EXPL operator is built into the logical representation of *have*.

(110) $[\![\text{have}]\!] : \lambda P \lambda z \varepsilon d_1.(EXPL(P))(z)(\uparrow d_1))$

Composition of *have* with the dynamic representation of *sister* yields the result in (111) (see LeBruyn et al. for the full derivation).[29]

(111) $[\![\text{have a sister}]\!] : \lambda z(\varepsilon d_1(\varepsilon d_i(\uparrow \textbf{sister}(\uparrow d_i)(\uparrow d_1)); \uparrow d_i \cong z))$

When the entity-denoting subject comes in, the result is (112a), which they argue is equivalent to the static representation in (112b):

(112) a. $[\![\text{Mary has a sister}]\!] : \varepsilon d_1(\varepsilon d_i(\uparrow \textbf{sister}(\uparrow d_i)(\uparrow d_1)); \uparrow d_i \cong \uparrow \textbf{Mary})$
b. $\exists.\textbf{sister}(\textbf{mary})(x)$

Sortal nouns have the same kind of representation with an explicit and an implicit variable. In that case, however, the relation connecting both variables is determined by the Qualia-structure of the (sortal) noun –that is, Vikner & Jensen's idea, which we have seen applied to *have*-sentences already in Beavers et al. (2009). The idea is that sortal nouns come with a series of interpretations which are derivable without previous context. For instance, (113) can mean that John is the author of the blog in question (a relation contained in the *agentive* qualia role), but not, out of context, that there is a blog that John is always talking about:

- Next to the traditional 'functional variables' (x,y,z...), there is another type of variables, 'discourse markers', represented as d_i or d_1. Roman subscripts are for implicit variables, and Arabic ones for explicit variables. They are bound by dynamic quantifiers, which can bind across brackets and conjunctions. When combined with arguments they are not replaced but 'updated' (with $\cong$).
- $\uparrow$ marks a shift from static expressions to dynamic ones, explicit in discourse markers and predicate constants.

See LeBruyn et al. (2016) for details.

[29] As in their previous paper, LeBruyn et al. (2016) factor out the contribution of the indefinite article. They deal with it by putting forward a dynamic version of the BE type-shifter in Partee (1987); see LeBruyn et al. (2016: 57).

(113) John has a blog

So one possible dynamic representation of *blog* is in (114) below, where the relation, and thus the value of the implicit argument, is taken from the *agentive* qualia role. Note that, in contrast to their previous account (and to most of the literature relying on incorporation-like approaches), the relation is not added here as a separate conjunct in the formula, like in (115). The noun becomes fully relational, in the sense that there is only one constant: the one corresponding to the relation.

(114) $[\![\text{blog}_{dynamic}]\!] = \lambda x \varepsilon y_i(\uparrow \textbf{blog-created-by}(\uparrow d_i)(x))$

(115) $[\![\text{blog}_{static}]\!] = \lambda x \exists y.\textbf{blog}(y) \wedge \textbf{created-by}(y)(x)$

As already mentioned, one point in common with their previous analysis is that the representation of the determiner is factored out. To account for languages like English, which obligatorily need a determiner to license an NP, LeBruyn et al. explicitly link the object position of *have* with the predicate nominal: the determiner is there for syntactic reasons, but it has no semantic contribution to make. The intuition is thus the same as in the line of literature on existential constructions exemplified by Milsark (1977), McNally (1992) and McCloskey (2014), although the idea is implemented very differently and so are the consequences of this implementation. What is more, one wonders, as in their 2013's analysis, how to treat cases like those in (116):

(116) a. John has several sisters
b. Mary has a lot of friends
c. Laura has more than five cousins
d. Peter has few friends

Both accounts by LeBruyn et al. (2013 and 2016) are based on the assumption that being a verb with a *have*-component is crucial to being able to incorporate bare arguments in languages like Romanian or Catalan (following Borthen (2003), Espinal and McNally (2011) a.o.). Their answer to why these verbs incorporate is because *have* takes nouns with an implicit relational component, and the contribution of the determiner can be canceled through a type-shifting mechanism. This predicts that in the Romanian minimal pair (117) –and its Catalan translation in (118)–, the variant without *un* is in a way the 'true' one, the one that does not require any semantic operation to apply to get rid of the indefinite article:

(117) a. Ion are copil
John has child
John has a child
b. Ion are un copil
John has a child
John has a child

(118) a. En Joan té fill

ART John has child
John has a child

b. En Joan té un fill
ART John has a child
John has a child

The problem with this reasoning is that in Catalan –and also in Romanian, according to the native speakers I have consulted–, the articleless version has very restricted contexts of occurrence, at least with *fill* ('child') as an object. There are scenarios where it would be acceptable, but they require a lot of context; even in these scenarios, the variant with the article would be acceptable as well. Making the articleless variant the one where the function of *have* is truly allowed to shine through is somewhat counterintuitive.

A more severe problem is that this view generates a prediction, explicitly mentioned in the article, that is not true, at least for Catalan: that the articleless variant cannot be used with a non-relational interpretation. That is, *Ion are copil/En Joan té fill* can never express a relation which is not the biological one. The fact that they are articleless, therefore $\langle et \rangle$, disallows the use of heavy-*have*, which is a relation between ordinary entities (e or $\langle et, t \rangle$), and is the use of *have* required to derive non-relational readings of relational nouns.

(119) $[\![\text{have}_{heavy}]\!] : \lambda x \lambda y . R(x)(y)$

Imagine a context where two psychologists working at a school are interviewing a group of parents for a study. They interview fathers and mothers separately, several of each group every day. During a break, psychologist A could perfectly ask psychologist B the question in (120a) with the intention of knowing if B is interviewing a father or a mother after the break, and B could respond with (120b).

(120) a. – Què tens ara, pare o mare?
What you-have now, father or mother?
What do you have now, a father or a mother?

b. – Tinc pare, i després mare.
I-have father, and after mother
I have a father, and after that a mother

As illustrated, this interpretation requires a heavy context, but certainly not more than any instance of *tenir fill* without the article. The prediction made by LeBruyn et al. thus seems to be false, at least for Catalan –and nothing in their account suggests that the prediction applies just to Romanian.

To the extent that it relies on Vikner & Jensen's approach, LeBruyn et al. inherit an issue that V&J already noted: it turns out that most possessive relations, like *John's car* or *John's dog*, do not rely on any qualia role. V&J assign to these cases an interpretation where the relevant relation is 'control', which is not drawn from the qualia structure. What LeBruyn et al. do is posit a new qualia-role, 'possessive', to cover such cases. The issue remains, however, that in most cases we will end up only with 'agentive' or 'possessive'

as the only possible interpretations, and pragmatics will rule out the agentive one in most cases (nouns like *blog*, which have a salient agentive interpretation, are the exception more than the rule); see the discussion in section 1.2.3.

To sum up, LeBruyn et al. (2016) contains two insights I will make use of: (i) that there is no difference in type between relational and sortal nouns, and (ii) that existential-*have* and the definiteness associated with it holds for relational and sortal nouns. However, to avoid the complications this analysis might bring about concerning the interpretation of the variants with and without articles, my implementation of these insights will follow a different route.

1.4. Conclusions (and open issues)

A first observation arising from this review of the literature is that, while there is agreement among researchers on the nature of the problems *have* gives rise to, there is little consensus on how these problems should be technically solved. Although some authors claim that their analyses are based on previous accounts (e.g. Beavers et al. (2009) builds on Partee (1999) and Tham (2006)), every approach to *have* I have surveyed essentially amounts to putting forward a different possible technical way to explicate how *have* can take relational nouns (of logical type $\langle e, et\rangle$) as objects and make the subject saturate the internal argument of these nouns in a compositional way, and why this causes a definiteness effect.

Since this ability to take relational nouns as objects seems to be a peculiar feature of *have* (and possibly of related verbs like *want* and *get*), the ad-hoc nature (at least to some extent) of these analyses has not stirred much criticism. It seems that, given that *have* is a very special verb, a very special analysis is called for or is, at least, justified. However, one of the main features of *have* is that its range of uses is particularly wide, not only in English, but in all languages with an equivalent verb. One would like to have, in principle, an analysis for it that is at least compatible with this very salient feature. If we, by contrast, compartmentalize even a small subset of its uses (i.e. those where *have* combines with a simple NP), we do not get any closer to this general goal.[30]

The path that I will take will lead me to challenge the basic presupposition all these analyses are based on, which is responsible for the technical complications they have to resort to: the view that treats the difference between sortal nouns and relational nouns as one of logical type ($\langle et\rangle$ for the former, and $\langle e, et\rangle$ for the latter). I will argue, in Chapter 2, that the data that this distinction is meant to explain can be accounted for by assuming that all nouns are of type $\langle et\rangle$, and that the distinction between the two classes of nouns is pragmatic rather than semantic. This will spare us a lot of technical complications, and I will argue that it will allow us to make better predictions into the bargain. One of these predictions is that the definiteness effect affects both sortal and relational nouns (something that Tham (2006) argues for as well). This will support the intuition that, whereas (121a) easily expresses that Laura has a cat as a pet, (121b) is an awkward way

[30]This point applies to a much lesser extent to analyses intended to unify several uses of *have*, like Beavers et al. (2009), Sæbø (2009) or Myler (2014).

of conveying this meaning, and rather seems to depend on a different relation coming from context.

(121) a. Laura has a cat
b. Laura has the cat

Aside from questioning the scope of the definiteness effect assumed by most analyses, I will also cast doubt upon the simple opposition between strong and weak nominals they are implicitly based on. I will do so because there are certain types of definite or obligatorily quantificational NPs that are not subject to the effect, as shown by the sentences in (122), a fact that is mentioned –without fully accounting for it– by Myler (2014). Such sentences have thus not been systematically considered by any semantic analysis of *have*, although similar data have been dealt with in the literature on existential constructions for decades.

(122) a. John has the smartest girlfriend
b. Mary has the car she always wanted
c. John has the arm of Roger Federer
d. Mary has both kinds of sister
e. John has every reason to be happy

I will deal with these examples in chapter 3. Before that, I will look into how we understand the relations conveyed by *have*-sentences, and I will argue that the explanation does not need a distinction in logical type between sortal and relational nouns. This will be the subject matter of chapter 2.

Chapter 2

Relations, nouns and *have*

2.1. Introduction

Chapter 1 has ended with a set of open issues left by the existing semantic literature on *have*. I have argued that these problems arise from the view of relational nouns as two-place predicates, and a too simplistic view of the definiteness effect. In this chapter I will focus on the first of these problems: the distinction in logical type between sortal and relational nouns. I will suggest an alternative treatment which does not posit a difference in logical type between the two classes of nouns, thus avoiding the need for complicating the semantics of *have* so it can handle transitive NPs as objects. I will then extend this treatment to *have*-sentences with sortal nouns as well.

The chapter is structured as follows. Section 2.2 takes a close look at the data that justifies a two-place-relation view of relational nouns not just in English, but cross-linguistically. These data come down to a distinction between what are normally called *alienable* and *inalienable* possessive constructions, which are overtly distinguished in most languages (*of*-PPs in English being an example of an inalienable possessive constructions). I will assess how well the intuitive notion of inalienability and the class of nouns argued to be of type $\langle e, et\rangle$ correlate, and I will identify some problems this correlation poses.

In section 2.3 I will survey some of the tests that have been put forward for identifying relational nouns, e.g. constructions associated with constraints that can be potentially explained if one assumes that some nouns are $\langle e, et\rangle$ while others are not. These tests are *of*-PPs in English, predicative uses of genitives, ability to license arguments in discourse, and bindability of an implicit possessor by quantifiers. I will show that an account based on the idea that relational nouns do not translate as relations, but rather *entail* them, actually makes better predictions.

In section 2.4 I will develop this view, which will involve a pragmatic component: a discourse condition on the use of discourse referents described by relational nouns, which I will call the Non-derived Relational Noun Instantiation Condition. I will then posit a

similar treatment for sortal nouns. Contextualized-*have* sentences, in which the relation comes from the discourse context, will then be considered. Finally, section 2.5 briefly summarizes the chapter.

2.2. What are relational nouns meant to account for?

As has been made clear in Chapter 1, one common aspect behind all semantic analyses of *have* on the market is that they presuppose the view that relational nouns (ultimately) denote two-place relations. In this section I would like to challenge this presupposition. I will not question that there is a pre-theoretical notion of relationality that distinguishes between e.g. *woman* and *sister*: an entity does not need to be in any relation with another individual to qualify as a woman, whereas it has to have a sibling to qualify as a sister. I will refer to nouns like *sister* as *notionally relational*. However, I will put forward a way of capturing the consequences of this distinction regarding the use in discourse of both types of nominals that does not entail giving relational nouns an argument structure.

As a first step towards this alternative approach, let us first trace back what justifies introducing (non-derived) transitive nouns into the semantics –along with the complications this view carries with it. This need arises for two main reasons.

1. The observation that languages tend to have different types of 'possessive' constructions. Some of them express a 'tighter' link between the two entities than others. The typological/functional literature normally refers to this fact as a contrast between alienable and inalienable relations. Some nouns are conceived of as *obligatorily possessed*, that is, they can only appear in discourse as part of an inalienable possessive construction. Formal semantic literature correlates this distinction with the number of arguments a noun has: inalienable possessive relations involve two-place nouns; alienable ones involve one-place nouns.

2. The fact that, sometimes, the same construction (e.g. predicate genitives in English, as in *this jacket is John's*) gives rise to different meaning possibilities depending on whether the noun denotes a one-place or two-place relation. These differences in interpretation have to do with the role of the nominal understood as the possessor (*John's* in *this jacket is John's*): either an argument of a relational noun or a relation-contributing modifier/predicate (Partee & Borschev (1998, 2001, 2003, a.o.)).

In this section I will first argue that the idea of inalienability and the idea of relationality do not match completely. There is an undeniable overlap between them: most nouns that participate in 'inalienable' constructions are notionally relational. However, while the notion of relationality is intuitively clear at least for a certain subset of cases (kinship terms, body parts, part-whole relations), we will see that it is very hard to find constructions that treat even these clear cases in a uniform way.

Secondly, I will review some of the evidence based on the different behavior of sortal and relational nouns (mainly in English, but also in other languages), and I will argue that what seems to be at play is not notional relationality. A major factor will be what relations

between types of things we assume to hold (relative to particular situations).

2.2.1. The alienable/inalienable distinction

2.2.1.1. Characterization of the distinction

Many languages of the world have a grammatical distinction between inalienable and alienable nouns[1] (see e.g. Heine (1997: 10ff) and Stassen (2009: 10-20)). Heine (1997: 10) provides the following list of items that 'are likely to be treated as inalienable', which is very similar to Barker's classification of relational nouns –modulo the splitting of the class of part-wholes into 'relational spatial concepts' and 'parts of other items', which hints at the difference between autonomous and dependent parts discussed in Chapter 1.

(a) Kinship roles
(b) Body-parts
(c) Relational spatial concepts, like *top*, *bottom*, *interior*, etc.
(d) Parts of other items, like *branch*, *handle*, etc.
(e) Physical and mental states, like *strength*, *fear*, etc.
(f) Nominalizations, like in *his singing*, *the planting of bananas*, etc.

Some examples of the distinction are the following:

(1) a. latzek
your scorpion
your pet-scorpion
b. latzek-al
your scorpion
your scorpion (transiently related to you: the scorpion that you just stepped on, the scorpion that just tried to bite you, etc.) (Tzotzil (Mayan); Barker (1995))

(2) a. rauparaupa-ku
picture- my
a picture of me
b. ge- ku rauparaupa
a picture in my possession (Aroma (Melanesian); Heine (1997, originally from Lynch (1973)))

(3) a. bura=ne vyanten en=te
blood=TRANS person DEM=MED
this person's blood (body part reading)
b. bura ∅-e vyanten en=te

[1] As Heine (1997:10) points out, this distinction has been referred to with a variety of terms, but 'alienable' and 'inalienable' seem to be the most frequent.

blood CL2-LINK person DEM=MED
this person's (animal) blood (ownership reading) (Daakaka (Malayo-Polinesian); von Prince (2016))

The point to draw from these data is that nouns that are notionally relational are allowed to occur in inalienable-possessive constructions, whereas sortal nouns are not. Sortal nouns can occur in alienable-possessive constructions –which allegedly express vague or context-dependent relations. Relational nouns can also participate in the latter constructions, but they crucially lose their relational interpretation on the way. The distinction between alienable and inalienable nouns is usually associated with nominal possession (possessive NPs), rather than with predicative possession (possessive sentences). However, we will see in section 2.2.1.3 that it also manifests itself in predicative possession.

2.2.1.2. Correspondence between inalienability and transitivity

The correspondence between the class of transitive nouns and the notion of inalienability is clear in Barker's approach (see e.g. (2011: 1112-1113)). This does not mean, however, that there is a one-to-one mapping between relational concepts and actual relational nouns in a language. Barker (1995) mentions New Caledonian as a case in point. In this language, *liver* is treated as inalienable, and *heart* as alienable (a fact which is explained by the local culture and the values attributed to each organ). This is what this fact shows, according to Barker, about the relation between inalienability and transitivity:

> "[A]lthough inalienability does line up with relational denotations, and alienability lines up with monadic interpretations, it is not possible to deduce what nouns will fall in the inalienable class simply by examining their denotative meanings. Presumably even for the modern New Caledonian, both *liver* and *heart* continue to denote part-whole relations. Which one is considered by the language to be necessarily or intrinsically relational, however, is a matter for lexical idiosyncrasy". (1995: 68)

That is, there might be notionally relational nouns that are treated as alienable (and thus as sortal nouns, of type $\langle et \rangle$) for cultural reasons. The other side of the coin are nouns which are not notionally relational, but are so saliently connected to individuals in a particular society that they behave in a quasi-inalienable way. Prototypical examples are *dog*, *cat* or *car* in Western-style societies:

> "These nouns are not obviously relational the way that kinship terms or body part terms are. Yet they are more relational than relentlessly monadic predicates such as the translation of *human*: there is no way to guess what the relevant proximity metric is for an expression like *John's human* in the absence of some more specific context. Perhaps *cat*, *car* and so on are on their way to becoming conventionally relational, so that at some point in the future the noun *cat* will entail the existence of an owner just as strongly as the noun *pet* does today. However, for the sake of making strong predictions, I prefer

to class *cat* or *car* and their like as strictly non-relational nouns". (1995: 77)

Recall that, on Barker's view, relational nouns are those that (i) can participate in inalienable possessive constructions (such as postnominal possessive NPs in English) and (ii) give rise to unambiguous possessive relations when uttered out of the blue (e.g. *John's cat* is not ambiguous in the sense *John's human* is). However, his treatment of quasi-relational nouns like *cat* or *car* makes clear that the only criterion for determining whether a noun is of type $\langle e, et\rangle$ instead of $\langle et\rangle$ is its ability to occur in inalienable possessive constructions. At the same time, his explanation of the contrast between *liver* and *heart* in New Caledonian entails that notional relationality is not crucial in determining semantic type. It all reduces to the ability to enter inalienable possessive constructions, which may vary across languages. Whether a noun denotes a one- or two-place relation is then a language-dependent issue.

This difference in semantic type is then argued to be the key to explaining the differences between alienable and inalienable possessive constructions in the language in question: the differences should follow from this argument-structural difference. In the case of the distinction between English pre-nominal and post-nominal genitives, his account leads to the –apparently adequate– prediction that post-nominal genitives are incompatible with pragmatic interpretations, because the type-shifter supplying the pragmatic relation is part of the functional structure of one of the two versions of the pre-nominal genitive he posits: the one that is argued to combine only with $\langle et\rangle$ nouns.

Summing up, although Barker's account makes right predictions for English, there is a certain circularity in it. It first establishes that transitive nouns (nouns of type $\langle e, et\rangle$) are just those that can participate in inalienable possessive constructions, regardless of notional relationality and the ability to give rise to unambiguous possessive relations. It then explains the compositional difference between inalienable and alienable possessive constructions based on the semantic type of the noun –but the criterion for deciding the semantic type of the noun is not independent of its ability to occur in the construction.

Heine (1997: 11) provides more arguments to be skeptical about the relationship between notional relationality and the set of nouns that can participate in inalienable-possessive constructions across languages:

> "The way inalienability is defined in a given case or in a given language is largely dependent on culture-specific conventions. In some languages, concepts like 'neighbour', 'house', 'bed,' 'fire', 'clothes', or 'spear' [*which are not notionally relational*] belong to the inalienable category, while in other languages they do not. Languages do in fact differ considerably with regard to where the boundary between inalienably and alienably possessed items is located." (1997: 11)

Heine also argues that attempts to find a core notion of inalienability from which to construct an implicational hierarchy, that is, a hierarchy of types of nouns that classifies them along the dimension of how relational they are, have always been counterexemplified by

the typological data.

Note, additionally, that the sortal/relational distinction is a binary one: a noun is either relational or sortal (without excluding the possibility that it has the two versions). This is so because the distinction is intended to account for a binary distinction between inalienable and alienable possessive constructions. However, this will not be enough for some languages. A paradigmatic case are aboriginal languages of Australia, which make very fine-grained distinctions among possible types of 'possessive' relations between entities (Heine (1997: 24)). In the same vein, Stassen (2009: 23-24) mentions the case of Qiang, a language from the Sino-Tibetan family. This language has four different possessive constructions. One of them is used only for ownership of (alienable) personal objects which are particularly valuable; another is used for regular ownership 'of objects which are not part of the person', and it includes kinship terms (and thus mixes sortal and notionally relational nouns); a third one includes inalienably possessed nouns which are not normally conceived of as detached from their possessors, such as body parts; finally, there is a structure for 'temporary physical possession' which is reminiscent of Tham's notion of 'control-*have* (see chapter 3). A two-way distinction in logical type will not probably be of much help in such cases.

Yet another case is represented by the Misumalpan language Ulwa (Koontz-Garboden and Francez (2010), Francez and Koontz-Garboden (2015, 2016)). The examples provided by Koontz-Garboden and Francez point to a binary distinction between the possession of abstract properties (e.g. *have tallness*, which is the way property concepts are predicated of individuals in that language), which uses a special possessive suffix, and all other possessive relations, including notionally relational ones such as kinship terms, which use the *have*-verb in the language. It is not clear how the difference in semantic type will help in such cases either –although it can of course be made an ingredient, not the only one, of the analysis, as Koontz-Garboden and Francez (2010) do.

The upshot of this discussion is that the connection between notional relationality and actual compatibility with inalienable possessive constructions is not of complete overlap; it is more like a statistical tendency. Notional relationality is the ultimate justification for having $\langle e, et \rangle$ nouns: *sister* cannot pick out a set of entities in the same way as *woman* does, but *sister of Nicky Hilton* does –it picks out the set which has Paris Hilton as its only member. However, there are plenty of examples in the literature showing that whether a language treats a noun as inalienable is, to a certain extent, idiosyncratic. At the same time, having relational nouns in possessive constructions (both in nominal and predicative possession) introduces a series of complications that are recalcitrant to compositional accounts which are not somewhat *ad hoc*, as we have seen in Chapter 1. So maybe there is room for a treatment of the difference between relational and sortal nouns not based on semantic type, but on constraints on how these nouns can be used in discourse.

Nevertheless, as Barker's account of English possessive NPs illustrates, a distinction in semantic type between sortal and relational nouns can make correct predictions (as a recent example, see e.g. the analysis of possession in Dakaaka by von Prince (2016)). In section 2.3 I will focus on some of the predictions that the distinction is argued to make

in English and some other languages. Before that, however, we will take a brief look at examples of the (in)alienability distinction in predicative possession.

2.2.1.3. A note on predicative possession

The (in)alienability distinction has reflexes in clausal syntax in many languages as well. A very common phenomenon in languages of the world is known as 'possessor ascension' or 'possession raising'. Possessors of relational nouns can (or sometimes must) 'ascend' to an argumental status in the sentence, typically dative. The contrast between (4) and (5) in Catalan is an illustration of this phenomenon.

(4) a. #He rentat el meu cap
I-have washed the mine head
I washed my head
b. He rentat el meu cotxe
I-have washed the mine car
I washed my car
c. He rentat el meu gos
I-have washed the mine dog
I washed my dog

(5) a. M'he rentat el cap
DAT.1.SG-have washed the head
I washed my head
b. ?M'he rentat el cotxe
DAT.1.SG-have washed the car
I washed my car
c. #M'he rentat el gos
DAT.1.SG-have washed the dog
I washed my dog

Heine (1997:14) provides another example of possessor ascension, this time in German.

(6) a. Mein Hund hat Karls Knie geleckt
My dog has of-Karl knee licked
My dog licked Karl's knee
b. Mein Hund hat Karl das knie geleckt
My dog has to-Karl the knee licked
My dog licked Karl's knee
c. Mein Hund had Karl am Knie geleckt
My dog has licked Karl at-the knee
My dog licked Karl's knee

In (6a), which is taken by Heine to be the basic construction, the possessor is a 'genitival

modifier'. In (6b), this same possessor has been promoted to argumental status: in is the indirect object. In (6c) the possessor has argumental status as well, but in this case as a direct object.

Even more so than in the domain of nominal syntax, many problems arise if we try to relate this sort of constructions to the notion of relationality assumed by Barker. Possessor raising constructions do not seem to select for the class of relational nouns as a whole; they are normally limited to some subset of this class –see the discussion in Heine (1997: 18ff and 163-172).

In what follows I will focus on the predictions made by the two-place analysis of relational nouns in the area of nominal possession, since this has been the focus of most semantic literature.

2.3. Relationality tests

In this section I will zero in on four constructions where the distinction in argument structure between relational and sortal nouns has been argued to be crucial: postnominal possessives (e.g. *the sister of John*), predicative uses of genitives (*this jacket is John's*), licensing of arguments in discourse (*A man came in. His daughter was with him*), and bindability of an implicit possessor (*every soldier faced an enemy*). Only the first of these tests is specific to English. I will analyze the others mainly using English data, but I will resort to Catalan, Dutch and German data as well. In particular, I will assess whether the distinctions made by these tests actually correlate with the notion of relationality or inalienability. I will argue that these data can also be explained by seeing notional relationality as a constraint not on the semantic type of nominals, but on the way they are introduced into the discourse, and that, ultimately, this view makes better predictions.

2.3.1. *Of*-PPs

Incompatibility of post-nominal possessives with sortal nouns is the main test mentioned by Barker (1995: 9) as evidence of the type distinction between sortal and relational nouns.

(7) a. The cousin of John
b. The leg of the table
c. The teacher of Peter

(8) a. ??The mug of John
b. ??The wallet of my cousin
c. ??The phone of Peter

Barker already points out that the acceptability of the postnominal possessives is connected to semantic type only 'in part' (1995: 9). There are other factors involved, such

as the information structural status and the relative 'weight' of the two NPs in the relation, or the presence of a non-restrictive modifier. Note, for instance, that although *the phone/computer of X* is heavily dispreferred over *X's phone/computer*, the former construction can be found if the possessor NP is particularly heavy and/or discourse new, as in the case of (9a) or (9b), or in the presence of non-restrictive modifiers of the possessor, as in (9c), or predicative modifiers of the possessor, as in (9d).

(9) a. The phone of the girl next to him buzzed like a fly (cf. *The girl next to him's phone...*)[2]

b. But police say that so far they have not come up with hard evidence of a bias crime, even after searching the computer of the self-avowed atheist who turned himself in, Stephen Hicks[3] (cf. *...searching the self avowed atheist who turned himself in's computer*)

c. The threats come scribbled on pieces of paper, or as text messages sent to the phone of Judge Zuhair al-Maliky, the former head of the Central Criminal Court of Iraq[4] (cf. #*...sent to Judge Zuhair al-Makiky's phone, the former head of...*)

d. The FBI is examining the computer of a pimp linked to a dead prostitute found on the shore of Long Island[5] (cf. #*...examining a pimp's computer linked to a dead prostitute...*)

LeBruyn et al. (2016) point out examples such as (10) to highlight that some non-relational nouns like 'blog' occur felicitously with post-nominal arguments:

(10) The blog of Dr. Watson[6]

Further, there are minimal pairs like the following, where the same (sortal) noun is more or less acceptable depending on who the possessor is:

(11) a. ??The hammer of my uncle

b. The hammer of Thor

(12) a. ??The dog of Mary is pretty cute

b. The constellation Canis Major, sometimes called the Dog of Orion, makes one of the sky's most interesting patterns[7]

The availability of post-nominal possessives in English is certainly much more restricted than that of prenominal possessives. There is an undeniably strong correlation between nouns that are notionally relational and the ones more easily found in postnominal possessive constructions. However, the data in this section show that semantic type can hardly be

[2]https://www.openletterbooks.org/pages/a-short-tale-of-shame-excerpt

[3]https://www.csmonitor.com/USA/Society/2015/0212/How-shock-over-murder-of-Muslim-Americans-could-counter-creeping-Islamophobia

[4]https://www.csmonitor.com/2006/0622/p01s02-woiq.html

[5]http://carlraylouk.blogspot.com.es/2011/04/april-15-2011-beck-why-us-must-stand.html

[6]http://www.johnwatsonblog.co.uk/

[7]https://www.emporia.edu/physci/planetarium/night-skies

regarded as the only factor explaining the availability of post-nominal possessives.

At this point I cannot provide a full-fledged alternative account of what limits the felicity of post-nominal possessive NPs in the way outlined in this section. A potential line of explanation that might help us understand some of the data, e.g. the contrast in (11) and (12), could come from the distinction between 'contingent states' and 'necessary states' made by Lyons (1968b: 301). The former holds between entities that are 'temporarily associated', the latter between those that are 'permanently (or necessarily) associated'.

This contrast between contingent and necessary states applies to (11) or (12) in the following way. One of the features that define Thor, a mythical creature, is his relation with his hammer: this relation is conceived of as necessary. Uncles are generally not defined by their relations to hammers; this relation is much more transient. Perhaps notionally relational nouns are associated to necessary relations in Lyon's sense, hence their immediate availability to participate in the *of*-PP construction. Much more work, however, is needed to completely understand the post-nominal possessive NP in English.

2.3.2. Predicative uses of genitives

'Predicative genitives' is the name usually given to constructions like the ones in (13).

(13) a. This car is John's
b. The motorbike over there is Mary's

Throughout this section I will follow most of the literature on this issue and refer to *John's* in (13a) and *Mary's* in (13b) as 'genitives' (hence the term 'predicative genitives'). There are two generalizations that are relevant for our discussion, because they are apparently connected to the semantic type of the noun of which the predicate genitive is the 'possessor' argument: (i) sortal nouns make good subjects to copular sentences with predicate genitives; relational nouns make bad subjects; and (ii) in languages where predicate genitives can have overt NP-morphology, the range of interpretations of the relation between the predicate genitive and the subject changes depending on the presence of NP-morphology, as we will see. Let us tackle these two generalizations in turn.

2.3.2.1. Relational and sortal nouns as subjects

Copular sentences with genitives as predicates contrast minimally depending on the relationality of the noun in subject position. Sortal nouns are unproblematic, as illustrated in (14). Notionally relational nouns, by contrast, are infelicitous, as are NPs with adjectives like *favorite*, which are assumed to turn one-place nouns into two-place nominal structures ((15)-(16)).

(14) a. That jacket is John's
b. This computer is Mary's

(15) a. #That friend is John's
b. #That brother is Mary's

(16) #That favorite movie is John's

The problem, as laid out by Partee (1997) and Partee and Borschev (2003), is that in (15) we have to assume that *friend* and *brother* are used 'derelationalized' in the subject NP –otherwise they could not be used without their argument; then we need to infer that there is an elided instance of the same noun in predicative position (*that friend is John's friend*), but this time in its relational version. To process the sentence we are thus required to take a two-place noun such as *friend* or *brother*, derelationalize it to process the subject NP, and relationalize it back to process the predicative NP. Partee and Borschev argue that '[i]t may be that there is a restriction (perhaps a processing restriction) on shifting an expression away from its basic meaning and then back again' (2003: 81). If, unlike *friend* or *brother*, the relational noun has a very salient sortal reading (which thus does not have to be derived through online type-shifting), then the structure sounds more acceptable:

(17) a. That teacher is John's
b. That student is Mary's

However, if the noun in the subject position is clearly used relationally (which requires that the possessor argument be provided, e.g. through a possessive pronoun), then the genitive predicate is acceptable.

(18) His father is (also) John's

Example (18) shows, according to Partee and Borschev, that once it is clear that the noun in subject position is of type $\langle e, et\rangle$ (as signaled by the presence of the possessive pronoun saturating the internal argument), the same type as its elided instance in the predicative NP (*his father is (also) John's father*), the 'processing restriction' disappears and the sentence is licensed.

2.3.2.2. Do we really need $\langle e, et\rangle$-type nouns to account for these data?

Now consider sentence (19).

(19) #This mother is John's

There is something very counterintuitive about (19). A woman can be described as *a mother* by virtue of the relation she has with one or more other entities (her child/children). For an entity so described to enter the discourse, what seems to be needed is that this two-place relation, and the other individual(s) in the relation, are salient. Let us call this individual the 'possessor'. This is accomplished both in possessive NPs and *have*-sentences: they precisely introduce an entity that fits the description *mother* into the discourse (or simply refer back to it, in the case of possessive NPs) by linking it to the possessor (in

this case, John).

(20) When I rang the bell, John's mother opened the door

(21) John has a very nice mother

If the connection between a woman and her children is salient enough in the situation described, the noun *mother* can be used to identify this woman as if it were a sortal noun.

(22) The children shook with fear. But **the mother** drew them close, and they said, "Mother, we are not afraid, for you are near"[8].

In (22), the use of *the mother* is allowed because the possessors have a high degree of salience: they correspond to the NP *the children*.[9] However, what (19) tries to do is (i) use *mother* in the subject *without* overtly linking it to a possessor, thereby demanding a context that allows us to identify this possessor; and (ii) it asserts that the possessor is John, thus canceling the possibility that it were present in the previous discourse, which is what would have licensed the subject NP *this mother* in the first place.

Therefore, the problem with (19) seems to be essentially pragmatic. We can enrich the context to make this problem disappear. Imagine a group of men and women standing outside a kindergarten 5 minutes before 5 o'clock. Some of them are carrying strollers, others are holding small jackets, gloves and hats. The context makes it obvious that this group of people are standing there because they are in a certain relation to the children inside the kindergarten: they are their parents, and it is because of this role that they are participating in the situation described. In that context, one of the teachers inside the kindergarten, staring through the window, could point at one of the women waiting outside and utter (23) without triggering any sense of infelicity or anomaly:

(23) I think that mother over there is John's. She looks very young, doesn't she?

(23) also shows that it is not necessary that the context identifies who the possessor is to license the use of the relational noun. It can just be presupposed. If it is clear that there exists a possessor which is salient in the situation, the relational noun can be used without overt reference to the possessor. What (23) does is add the information that this presupposed individual with respect to one of the mothers is John, but we did not need to know that it was John to license the description *that mother* in that specific context.

Let us tentatively capture this state of affairs by positing a pragmatic principle restricting how a relational noun can be felicitously used as a description of an entity.

[8] http://www.rockdalereporter.com/news/2010-05-06/Faith/A_parable_for_Moms.html

[9] In this example the possessors are described with the relational noun *children*, which is complementary to *mother*, but this is not crucial to license the use of *mother* in the next sentence. *The three boys* or *John and Mary* could be used instead, and the use of the NP *the mother* in the next sentence would still be licensed.

(24) A relational noun can be used to describe a discourse referent only in a context where the relation this noun is associated with, and the individual with which it is associated ('the possessor'), are salient, or at least where the existence of such an individual, and its relevance to the situation, can be presupposed.

(24) is still very crude. It will be refined throughout this chapter. However, it opens up the path I will follow to put forward an alternative to the transitive view of relational nouns. At this point, (24) does not explain more data than Partee and Partee and Borschev's accounts of the same facts –although it simplifies things in the sense of not requiring us to hypothesize a vague 'processing restriction'.

Another type of data for which the argument structure of nouns has been argued to be crucial involves the interpretation of predicate genitives. I will first show how the facts are accounted for on analyses that use transitive nouns, mostly developed by Partee and Borschev. I will then question some aspects of the predictions of this approach, and suggest an alternative explanation along the lines of the one I have just introduced.

2.3.2.3. Predicate genitives with and without nominal morphology

Partee and Borschev (2003) identify a difference in the available interpretations of predicate genitives which manifests itself, in slightly different ways, in languages like Dutch, German, Polish and Russian. The distinction shows up in Catalan as well. In these languages, genitives and/or possessive pronouns in predicate position can appear either bare or with some mark of nominal structure. In Catalan and Dutch, the genitive can either be bare or preceded by an article or a demonstrative, respectively.

(25) a. Aquesta casa és la d'en Joan
This house is the of-the Joan
This house is John's
b. Aquesta casa és d'en Joan
This house is of-the Joan
This house is John's

(26) a. Die auto is die van Jan
That car is that of Jan
That car is Jan's
b. Die auto is van Jan
That car is of Jan
That car is Jan's (Partee and Borschev (2003: fn14))

German shows a similar contrast. In this language, predicative adjectives do not show agreement with the subject, but predicate possessives do. This is illustrated by (27a). However, standard German has a somewhat archaic construction in which the genitive does not agree with the subject, as in (27b), which Partee and Borschev take as a mark of a lack of nominal structure.

(27) a. Das Land ist (jetzt) meins
The.N.SG land is (now) mine.N.SG
This land is (now) mine
b. Das Land ist jetzt mein
The.N.SG land is (now) mine
This land is (now) mine

In Catalan, there is a similar opposition between bare possessives and possessives with a definite article, which essentially reproduces the contrast in (25).

(28) a. Aquest país és (ara) el meu
This country is (now) the mine
This country is now mine
b. Aquest país és (ara) meu
This country is (now) mine
This country is now mine

Partee and Borschev point out that the constructions with and without genitive morphology are not exactly equivalent. Sentences *without* nominal morphology (that is, (25b), (26b), (27b) and (28b)) have a range of interpretations restricted to possession/control. That is, (25b) and (26b) can be used to assert an ownership relation between Joan/Jan and the house/car in question, but it cannot naturally refer to the house/car that they like, or the one they mentioned yesterday in a conversation. The same is true about the sentences with possessive pronouns: (27b) and (28b) convey a 'control' interpretation (Partee and Borschev claim that (27b) 'suggests that a conqueror is speaking' (2003: 85)). The other sentence in each pair (that is, (25a), (26a), (27a) and (28a)), by contrast, can express any relation –including possession/control.

This difference in readings is accounted for in the following way, and here is when semantic type is argued to be crucial. In the absence of nominal morphology, predicative genitives need to be interpreted as being of type $\langle et \rangle$.[10] They call this the 'modifier' use of genitives. The genitive contributes a relation that is argued to be defined as possession/control (identified as R_{poss}):

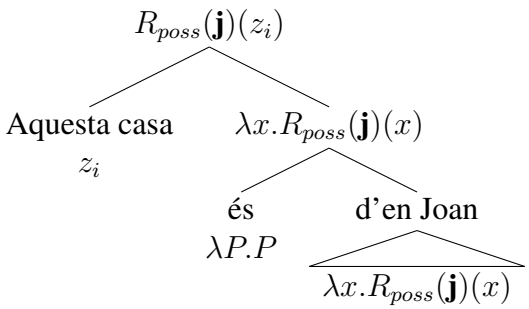
(29) John's$_{modifier}$ = $\lambda x.R_{poss}(\mathbf{john})(x)$

If we develop this view, the derivation of (25b) (with no nominal morphology), repeated here as (30), is illustrated in (31) (in a simplified way); z_i stands for the context-dependent *aquesta casa* (*this house*).

(30) Aquesta casa és d'en Joan
This house is of-the Joan

[10]There are languages with nominal possessive constructions that force an $\langle et \rangle$ reading of the genitive, so that the NP can only be interpreted as possession/ownership; Russian prenominal possessives are a case in point (Partee and Borschev (2003: 79ff)).

(31)



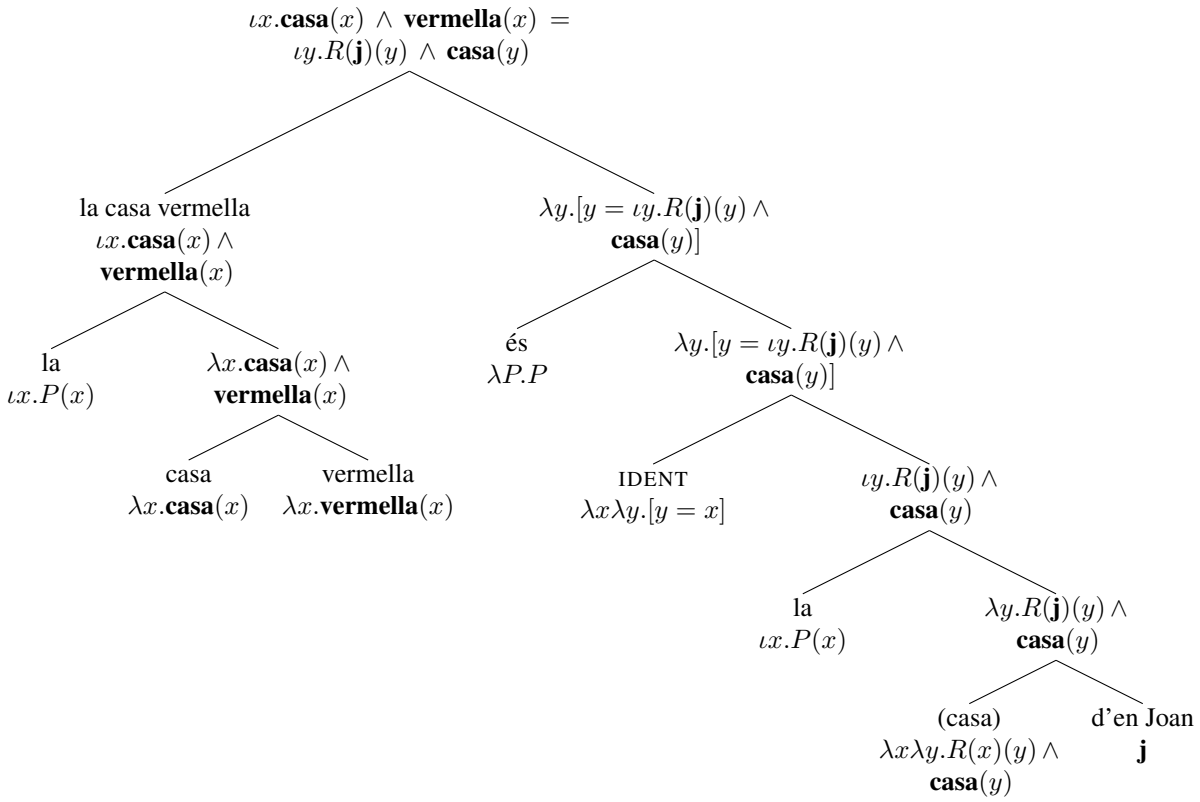
When there is nominal morphology, we do not find this restriction to ownership-control. (25a) can naturally refer to the house Joan likes, and and (26a) can refer to the car Jan is always talking about. Both sentences can also be understood as expressing possession. It is actually their most natural (out of the blue) reading. But they are not limited to this interpretation. Partee and Borschev's explanation is that these genitives are not of type of $\langle et \rangle$, but of an argumental type (either e or $\langle et, t \rangle$), and that nominal morphology signals the fact the the relationalized version of the noun of which they are an argument is covertly present. Note that here the account does not rely on the existence of transitive nouns which are notionally relational. These nouns will not appear in this construction, because they are not licensed as subjects (recall *this mother is John's* from the previous section). The crucial point is that sortal nouns, which translate as one-place predicates, can be relationalized.

I will illustrate how these works with (32), represented in (33), again with some simplifications:[11]

(32) La casa vermella és la d'en Joan
The house red is the of-the Joan
The red house is Joan's

[11]I am assuming a relationalized version of the noun *casa* in predicative position without detailing the way this fact should be derived in Catalan. I also assume that *d'en Joan*, like *of Joan* in English, denotes the individual corresponding to Joan, with *de* and the article *en* making no semantic contribution. Finally, I analyze (32) as an equative clause, and I apply Partee's (1986) treatment involving the type-shifter IDENT.

(33)



The crucial difference between (31) and (33) is that in the former the relation comes from the genitive NP and is argued to be limited to R_{poss}, whereas in the latter this relation is the free R relation (not limited to possession) that comes from relationalizing the sortal noun *casa*. The overt *casa* in subject position is sortal, the covert *casa* in predicative position has been relationalized.

The case of the German sentence (27a) and the Catalan (28a) is similar. In these cases, the most salient interpretation of the *R* relation (i.e. the relation coming from an elided instance of the noun in predicative position) is not possession: it is citizenship –according to Partee and Borschev, (27a) would be appropriately uttered by a newly naturalized citizen, and I share the same intuition with respect to the Catalan sentence (28a).

Partee & Borschev's account thus crucially relies on the fact that nouns can be transitive; since it is actually sortal nouns which appear most naturally with genitive NPs with nominal morphology, it actually relies on the existence of two-place nouns resulting from having relationalized nouns which by default translate as monadic predicates.

I have shown in this section how certain facts about the interpretation of possessive constructions can be explained by resorting to a division in the class of nouns between those that denote one-place predicates and those that denote two-place predicates. In the following subsection I will question whether the predictions made by these accounts actually hold, and I will suggest alternative ways to deal with them.

2.3.2.4. Do we really need $\langle e, et \rangle$ to account for the interpretation of possessive NPs?

Recall sentences (25a) and (28a) from above, repeated here as (34a) and (34b), and consider also (34c), a similar example.

(34) a. Aquesta casa és la d'en Joan
This house is the of-the John
This house is John's
b. Aquest país és el meu
This country is the mine
This country is mine
c. És la teva, aquesta jaqueta?
Is the yours, this jacket?
Is this jacket yours?

A crucial feature of these sentences is that the 'nominal structure' they show needs to be a definite determiner. An indefinite determiner will not do.[12]

(35) a. #Aquesta casa és una d'en Joan
This house is a/one of-the John
b. #Aquest país és un de meu
This country is a/one (of) mine
c. #És una de teva, aquesta jaqueta?
Is a/one yours, this jacket?

Let us first have a look at (34a). In most human societies, people are saliently connected to houses. By default, we assume that for every person, there is a house in which they live. Let us call this relation **person-house**: to every entity in its domain (which are all entities satisfying the description *person*, or, alternatively put, realizing the kind $\mathbf{person}_k$), it assigns an entity that satisfies the description *house* (or realizes the kind $\mathbf{house}_k$). For every person we can thus take for granted that there is one entity (which needs to be a member of the set denoted by *house*) that is connected to it by the **person-house** relation.

To illustrate how this influences the interpretation of predicative genitives, imagine I am taking a walk around town with my friend Mary. At a certain moment in our stroll, she points at a house and, without any previous mention of Joan in the discourse, utters (34a). I will infer that Mary is saying that the house she is pointing at is the value of the **person-house** function applied to Joan. Since my world-knowledge tells me that the most common situation is one where this function returns a single individual, I understand Mary's use of the definite article as signaling precisely that: that house is the only entity which is in the **person-house** relation with Joan –an individual I already assumed to exist and to be probably unique just because I know Joan is not a homeless person.

[12]The *de* preceding the possessive pronouns *meu*/*teva* in (35b) and (35c) is a partitive, which Catalan requires in indefinite NP without an overt head noun; it does not have the same function as the *de* (*d'* before vowels) in the genitive *d'en Joan* in (35a).

However, even though Mary used the definite article when uttering (34a), she might go on to say 'Did you know he also has a house in the Côte d'Azur?', and I would feel no contradiction in her discourse. Instead, I will infer that Mary is talking about another kind of relation, probably something like **person-summer house**, which is different from **person-house** (it entails different things about its arguments). Since we both know that **person-summer house** is far from being functional (not everyone has a summer house, and some have more than one), just uttering that an individual is in the domain of the relation is informative, unlike e.g. saying *Did you know Joan has a house?* when it is obvious that Joan is not homeless.

By contrast, if Mary and I happen to know that Joan owns *two* houses in town and spends periods in both, (34a) will be somewhat infelicitous: since we know that the value of the function **person-house** when applied to Joan is not unique, the use of the definite article will be perceived as anomalous.

The same reasoning will apply with any other relation Joan might be in with the house Mary is referring to. It might be, for instance, that we have been recently having dinner with Joan, and that he was talking about a house in town which he is considering buying. He gave the topic enough salience so that this relation between Joan and a certain house is part of the common ground between me and Mary. It is hard to pin down the name of that function; let us just call it **interest-in-house** (which will entail different things than relations of interest in other type of things). In that case, I should take (34a) as an instruction to identify the house Mary is pointing at as the value of this relation for Joan, which I know to be unique –hence Mary's use of the definite article.

The case of (34b) is similar. There is a relation between people and countries, call it **person-country**, which entails things like the fact that the person has spent an important part of his/her life in the country, is a legal citizen, etc. We assume every human being to be a citizen of (at least) one country. (34b) is naturally taken to refer to that relation, the definite article being licensed by the fact that this relation is generally one-to-one. Again, however, if another relation between the speaker and a country is salient –say we're playing a soccer video-game and I want another player not to pick the same national team I have chosen– the sentence can be taken to refer to that relation.

Finally, (34c) illustrates the fact that these relations between entities can be relative to particular situations. An example: when several people gather in a room, it is common that they take off their jackets and put them all in the same spot; we also assume that each person wears just one jacket. There is thus a one-to-one **person-jacket** relation relative to that type of situation. If in such a context someone asks me (34c), I need to understand that the question is probably about this relation, and the fact that it is generally assumed to be one-to-one licenses the definite article. Uniqueness is here relative to this particular situation: it would be rather absurd to consider (34c) infelicitous because the addressee has more jackets at home.

What is the difference between the account I am suggesting here and Partee & Borschev's? They both predict that these sentences with 'nominal morphology' are compatible with

a wide range of interpretations. The main difference lies in the fact that I have made no appeal to the notion of transitive noun. I have considered that world knowledge leads us to expect certain possible connections between types of entities. People are assumed to be related in certain ways to houses, countries, and jackets. These relations depend in the subtypes of entities it relates; **person-house** and **person-summer house** are different relations, and **realtor-house** is different from the generic **person-house**.

This way of looking at the facts does not force us to see these relations as coming from the noun (because it is relational or because it has been relationalized). We are considering cases where a relation between entities is introduced by possessive morphosyntax (possessive NPs in these examples, but the problem is shared with *have*-sentences). I have claimed above that world knowledge tells us which relations might hold between types of entities. We can thus see possessive morphosyntax (both possessive NPs and *have*-sentences) as introducing an empty relation that will be filled by one of these relations, and which one is right will be determined by contextual information. That is, in the situation where (34a) is uttered, I will infer that the relation asserted to hold between Joan and the house is **person-house**, and in (34b) it is **person-country**. But we do not need to transitivize the sortal noun *house*: it is just that world-knowledge and contextual information tells me which is the right interpretation of the possessive NP.

What about the variants with no nominal morphology? They feature the same possessive morphosyntax (presumably coming from the preposition *de*) as their counterparts with nominal morphology. The difference is reduced to the presence of this morphology – which, as we have seen, in Catalan is reduced to a mark of definiteness. On this view, the restriction to possession/control would be unexpected. We would expect the differences to be related to the presence of the definite article. So the first thing to determine is whether this limitation to possession/control relations is really the key to the interpretation of such sentences.

I will argue that this is not the key difference. It seems that bare possessive NPs can be used in two different situations: (i) when the existence of a relation between the two entities is not presupposed; and (ii) when a relation *is* presupposed, but what is at stake is whether a particular entity is part of the complex individual that is the value of this function when applied to a certain possessor. Let us use (36a), which contrasts minimally with (34c) above, repeated here as (36b), to illustrate this.

(36) a. És teva, aquesta jaqueta?
b. És la teva, aquesta jaqueta?

Let us start with the first case, one where the existence of a relation between the two relata is not presupposed. Imagine I have people over for lunch at my place. It is 37 degrees Celsius outside. I expect no one to bring a jacket. However, when my guests are leaving, I notice a rather thick jacket which is not mine located close to where Mary was seating. Asking her (36b) would be slightly odd: it is obvious that people don't wear jackets in such a situation, so there is no expected **person-jacket** relation. I do not want to convey that I assume the existence of such a relation. Nevertheless, I have evidence to believe

that the jacket is connected to Mary. Uttering (36a) (and not (36b)) thus seems the best move.

The second case is different: it assumes the that a certain relation holds between the two entities. Imagine I am at Mary's house, and I notice a jacket that clearly does not fit Mary's usual style. In that context, there is a salient relation: the default **person-jacket** relation, the one that holds between each of us and the jackets we own and use when it is cold. In that situation, there is a presupposed complex individual ('Mary's jackets') which is the value of the **person-jacket** function when applied to Mary. Asking her (36a) in that situation is tantamount to saying 'does that particular jacket belong to the complex individual connected to you by the relation **person-jacket**?' It is equivalent to (37), with an overt partitive:

(37) És una de les teves, aquesta jaqueta?
Is one of the yours, this jacket?
Is this jacket one of yours?

However, does the relation between the two entities need to be possession/control, as claimed by Partee & Borschev? It does not. (36a) could be uttered by someone who works at a laundry who is not sure who is in charge of cleaning a particular jacket, or by someone asking a designer whether (s)he is the one who designed the jacket that a model is wearing. Possession/control does not seem to be the key to the interpretation of sentences with bare possessives.

English post-nominal genitives seem to be specialized in the second reading of bare genitives, the one where the existence of the relation is presupposed.

(38) a. A jacket of Mary's
b. A friend of Mary's

Both (38a) and (38b) presuppose the existence of a relation between Mary and a set of jackets and a set of friends. *Jacket* is a sortal noun. The kind of relation between Mary and the relevant jackets is determined by context, but since without previous context the most salient relation will be **person-jacket** (which entails that the person 'possesses' the jacket, among other things), (38a) has a clear 'possessive flavor'.

Friend, in contrast, is a relational noun. If the entity described by (38b) is introduced into the discourse for the first time, the only possible relation holding between that entity and Mary seems to be **friendship** (I have already suggested in (24) why this could be so, and I will elaborate on that point below), but the point here is that (38b) presupposes that Mary stands in a **friendship** relation with a complex individual.

The incompatibility of the double genitive with definite determiners (#*the jacket of Mary's*) is explained by the fact that the construction behaves like a covert partitive: (38a) is equivalent to 'one of Mary's jackets', and (38b) to 'one of Mary's friends'. This view is in tune with Barker's (1998) analysis of these constructions.

A related point arises in connection with the pairs below, which contrast post-nominal possessive NPs with indefinite possessors, on the one hand, and double genitives, on the other.

(39) a. A portrait of Mary
b. A portrait of Mary's

(40) a. A biography of Mary
b. A biography of Mary's

The availability of such pairs seems to be connected to nouns that have salient notionally relational and sortal interpretations, like *portrait* or *biography*. A *portrait* is a graphic reproduction of an individual, and as such it is notionally connected to this individual. The same is true of *biography*: it is the life-story of an individual, and as such it is notionally connected to that individual. This is the interpretation of these nouns that licenses the post-nominal possessives (39a) and (40a). These NPs are non-ambiguous: they can only refer to the relation between a portrait and its portraitee and a biography and its biographee –and here again we find a connection with the (still preliminary) discourse principle (24) above.

However, both *portrait* and *biography* have come to denote physical objects, a particular kind of painting/photography and a particular kind of book, respectively. We can say things like *John saw many portraits in the Louvre* completely out of the blue. In that use, the information that a portrait needs to be related to a portraitee is part of the information we use to classify a painting as a portrait vs. some other type of painting, but is not crucial to license the use of the noun in discourse. So these nouns can behave as sortal nouns, and in this case any possible relation made available by our world-knowledge and licensed by context can hold between Mary and the portrait/biography in question.

We can thus conclude that a distinction in logical type is not necessary to explain the data related to predicate genitives based on the following arguments:

- All entities are the realization of a certain type. World knowledge tells us that, as such, they are in certain relations with entities of other types. This relation might be necessary or not. If an entity is of the type *mother*, it will necessarily be connected to other entities, namely her children. If an entity is a *jacket*, it may be connected to another individual, e.g. the person who owns and uses it, but this relation is not necessary.

- Types which are defined by necessary relations make notionally relational nouns. As outlined in the (preliminary) discourse principle (24), their use in discourse is felicitous if their connection with the entities they are necessarily related to is salient enough.

- Some relations between types of entities, while not being necessary, are generally assumed to hold: people are by default connected to e.g. houses (where they live),

jackets (which they own and use when it is cold) and countries (of which they are citizens). So for each person one can assume that a certain house, jacket and country exists connected to him/her. Predicative genitives with nominal morphology –which, as we have seen, often boils down to morphology expressing definiteness– can be used when such a relation between entities is assumed to hold.

- The fact that relations may or may not be assumed to hold between two types of entities (sometimes relative to particular situations) also seems to be the key to the contrast between predicative genitives with and without nominal morphology, rather than the opposition possession/free *R* posited by Partee & Borschev –which makes wrong predictions.

- Possessive morphosyntax can be seen as introducing an empty mold that can be filled with any of these relations potentially holding between types of entities that are licensed by world-knowledge and discourse context. We do not need them to come from the nouns themselves.

This dissertation is about *have* in English, so the fact that this section has focused on possessive NPs mainly in Catalan might look like a bit of a detour. I have taken this detour because English cannot be used to show the opposition between predicate genitives with and without nominal morphology, because the distinction has no overt manifestation in this language. Furthermore, the way of conceiving of possessive relations as relations between types of entities I am outlining holds in English as well; it is not language-dependent. Let us now move on to another test that is meant to tease nouns apart depending on their logical type: the licensing of arguments in discourse.

2.3.3. Licensing of arguments in discourse

Barker (1995: 10) points out the following contrast as evidence of a type-theoretic difference between sortal and relational nouns.

(41) a. A man walked in.
His daughter was with him.
b. A man walked in.
??His firetruck was visible through the window.

It is worth quoting what he says about it:

> "I claim that the ability to use a possessive description to introduce a novel discourse entity correlates with whether the possessive receives a lexical interpretation or not. In [(41a)], *daughter* is a relational noun, so that the discourse is perfectly felicitous, even in a neutral context. But in [(41b)], the noun *firetruck* is not relational, so no lexical possessive is possible, and the discourse is infelicitous (without previous context). The basic idea is that as long as the possession relation is explicitly provided by the denotation of

> the possessee, there is no difficulty in accepting a definite description whose reference depends on that relation; but if the relevant possession relation is an extrinsic, pragmatically determined relation, then additional context is needed to render a particular possession relation more salient before a definite possessive whose reference depends on that relation will be felicitous." (1995: 10)

Vikner and Jensen (2002) criticize this argument, in the sense that there seems to be nothing wrong with (41b) aside from the fact that accommodating the presupposition that a man has a firetruck is a little bit more costly than assuming he has a daughter. The main reason for that seems to be that in our world men are more frequently connected to entities that are their children than to entities which are firetrucks. But if we find less outlandish sortal nouns, there seems to be no problem at all with the licensing of novel discourse entities in the same fashion as in (41a).

(42) a. A man walked in.
His car/bicycle was visible through the window.
b. A woman walked into a bar. She took her wallet out of her purse. Her phone rang.

What is more, some relational nouns make the discourse pretty odd –odder anyway than (42a) or (42b) above, in which the relevant nouns are sortal.

(43) a. A man walked in. His second-cousin was smoking outside.
b. A woman walked into a bar. Her left foot measured 23 cm.

This is connected to the fact that the relation expressed by a possessive NP needs to be relevant in the situation described. The discourse opener in all the previous examples is the sentence *A man/woman walked in*. This conjures up a very vague scenario, but the image that comes to mind is one where an individual enters a space which is not his/her home (a bar, an office, etc). It is an scenario where the fact that the individual is connected to a car, a bicycle, a wallet, a phone, or a daughter, might be conceived of as relevant. However, even though the individual is surely connected to a left foot, this does not seem relevant in any scenario we might naturally think of. The fact that this noun is transitive (i.e. 'the possession relation is explicitly provided by the denotation of the possessee', as Barker puts it) does not easily license its use in (43b). *Second-cousin* is also a relational noun, but one that is not assumed to hold of all men, so it is neither relevant to the situation nor able to easily license the definiteness-entailing possessive pronoun *his* in (43a).

However, we can construct scenarios where this relations are relevant, and these relational nouns will be able to naturally license arguments in discourse.

(44) a. The groom was very embarrassed. His second-cousin burped while he was walking down the aisle.
b. The podiatrist told the woman that her left foot measured 23 cm.

In conclusion, the licensing of discourse referents through possessive NPs does not seem to be crucially connected to the logical type of the possessed NP. It seems to depend on whether the relation expressed by the possessive NP can be conceived of as relevant in the context. I will now address one more relationality test, and assess whether it too can be explained without resorting to transitive nouns.

2.3.4. Bindability of an implicit possessor

Partee (1989) and Barker (2011) point out that the internal argument of a relational noun can be bound by a quantifier, as in (45), whereas this is not possible with sortal nouns: (46) cannot easily mean that every soldier found a car of his/hers.

(45) Every soldier faced an enemy

(46) #Every soldier found a car

The idea is that the logical form of (45) corresponds to something like (47).

(47) $every\, x[\textbf{soldier}(x)](\exists y.\textbf{faced}(y)(x) \wedge \textbf{enemy}(x)(y))$

This predicts that any noun of the same type as *enemy* will give rise to a similar bound-variable interpretation. However, as Barker himself points out, the availability of this option with relational nouns is very limited, as illustrated in (48).

(48) a. #Every soldier wrote a mother
b. ?Every soldier wrote a sibling
c. #Every soldier faced a teacher (who scolded him for having become a soldier, when he used to be such a peaceful kid)

Example (48a) is probably ruled out because the uniqueness condition on *mother* interferes with the indefinite article. Example (48b) might be a little better, but it is not as natural as (45) above. Even if we change nothing from (45) except the relational noun, the sentence can easily become clumsy if the relational reading is intended, as in (48c).

What seems to be crucial is the type of event the sentence describes, irrespective of the alleged relationality of the noun. Soldiers are prototypically connected to events of facing enemies; participating in such events is one of the defining features of being a soldier. Similarly, defenders in soccer are typically assigned an opponent to shadow. *Opponent* is a relational noun, and this licenses (49a), as captured in the logical form (49b). Defenders, as members of soccer teams, have opponents in the same sense as soldiers have enemies.

(49) a. Every defender shadowed an opponent
b. $every\, x[\textbf{defender}(x)](\exists y.\textbf{shadow}(y)(x) \wedge \textbf{opponent}(x)(y))$

In contrast to *opponent*, the noun *forward* is sortal.[13] One can be an *opponent of someone*, but not a *forward of someone*. However, the interpretation of (50) below does not seem to be different from (49a) above.

(50) Every defender shadowed a forward

The explanation cannot be a logical form like (49b), because *forward* is not of the right type. Two possible counterarguments would be (i) to defend that *forward* has been relationalized in (50) or (ii) resort to a mechanism à la Sæbø (2009) and argue that there is a covert modifier such as *a forward of the opposing team*, where *opposing* supplies the relational component. In both cases, however, there should be an explanation of why this option does not apply across the board, i.e. why (50) is natural whereas (46) is not.

Again, the key seems to be what we know about how types of entities are connected to each other. A defender (a type whose defining features are most easily displayed in the context of a soccer match) has a certain relation with its opponents, and a more specific one with forwards. The fact that 'opponent' is notionally relational and 'forward' is not seems to be of secondary importance to license sentences with 'bound implicit possessors'.

A related point arises with regard to the contrast in (51). There is a salient relation connecting realtors and houses (call it **realtor-house**), different from the one common people have with their homes. This is what seems to be behind the fact that in (51a) we get a 'relational' reading of house: being involved in events of selling houses they are related to by **realtor-house** is a prototypical feature of realtors. Staring at these houses is not, hence the difficulty (maybe even impossibility) of interpreting (51b) in the relational reading, although nothing rules out that such a situation could potentially take place.

(51) a. Every realtor sold a house
b. Every realtor stared at a house

2.3.5. Interim summary

In this section I have shown that the two-place view of relational nouns does not seem to be essential in order to explain data that is usually presented as a justification of this view, and that it even gives rise to false predictions. I have outlined an alternative view based on our knowledge of how entities of different types are prototypically related, and I have singled out notionally relational nouns as those which can only be used in discourse when connected to the individual they are necessarily related to.

I am not aware of such a treatment having been put forward for notionally relational nouns. A treatment along very similar lines has however been suggested for *derived* relational nouns, i.e. those derived from verbs or adjectives, by Grimm and McNally

[13] One might argue that *forward* is relational in the sense it is connected to a soccer team. This could be defended, but the point here is that it does not require *a defender of another team* as a 'possessor' argument.

(2013). It is to this account, and to how it can be related to non-related relational nouns, that I now turn.

2.4. A non-transitive view of relational nouns

2.4.1. Grimm and McNally (2013): an alternative to (derived) transitive nouns

In section 1.2 I mentioned that the need to posit nouns denoting relations with more than one argument arose primarily for nouns derived from verbal or adjectival sources. These nouns seem to preserve the argument structure of their source, as illustrated by (52)-(53) (abstracting away from event-arguments):

(52) a. The boss hired John
b. $[\![\text{hire}]\!] : \lambda x \lambda y.\textbf{hire}(x)(y)$

(53) a. The hiring of John by the boss
b. $[\![\text{hiring}]\!] : \lambda x \lambda y.\textbf{hiring}(x)(y)$

The fact that these nouns have an argument structure understood as a set of 'ordered arguments' is called into question by Grimm and McNally (2013). Their point of departure is questioning the assumption, common in the syntactic literature, that there is a distinction between argument structure nominals on the one hand, and simple event nominals and sortal nominals, on the other. Nouns like *examination* are supposed to be interpretable in these three different ways.

(54) a. The examination of the patients took a long time (Argument Structure Nominal)
b. The examination took a long time (Result nominal)
c. The examination was on the table (Sortal nominal)

Grimm and McNally offer corpus evidence that the classic diagnostics backing the existence of argument-structure nominals (Grimshaw (1990) and subsequent literature) do not actually hold. Two of these tests are related to the obligatoriness of arguments in argument structure nominals. One of them states that an *of*-phrase is obligatory if a *by*-phrase is present. The other states that nominalizations such as *sending* or *handing* should not occur without arguments. Both claims are not supported by corpus evidence, since (felicitous) violations are attested (Grimm and McNally (2013: exs. (5) and (6))).

(55) a. How does a country recover from 40 years of destruction by an unchallenged tyrant?
b. While the originator (or his or her computerized agent) purposefully sent the information item into Jurisdiction B, the sending occurred instantaneously in response to the address supplied by the client, without any advance arrangement by the content originator

They also show corpus data strongly suggesting that the presence/absence of arguments

of deverbal nominalizations is related to their information-structural status: a deverbal nominal introduces an event token into the discourse, and its first occurrence needs to be tied to at least one of the participants involved in the event token. Once introduced, however, the presence or absence of participants is related to how salient they are in discourse: the more salient, the more easily they are dropped.

Grimm and McNally's idea is that deverbal nominals are not relational nouns –in the sense of having 'ordered arguments', as represented in (56a)–, but rather relation-entailing nouns, where 'the participant variables are free and can be contextually valued'. They are neo-Davidsonian properties of eventualities, as represented in (56b).

(56) a. $[\![\text{destruction}]\!] : \lambda y \lambda x \lambda e.[\textbf{destruction}(e, x, y)]$
b. $[\![\text{destruction}]\!] : \lambda e[\textbf{destruction}(e) \wedge \textbf{Ag}(e, x) \wedge \textbf{Th}(e, y)]$

They propose the following condition to account for the use of deverbal nominals in discourse:

(57) **Event Instantiation Condition**: The introduction of a token discourse referent for an eventuality *e* requires that *e* be anchored to a discourse referent corresponding to at least one of its participants.

This principle is inspired by examples such as (55) above. The discourse behavior of non-derived relational nouns turns out to be not that different from that of deverbal nouns. This was already captured in the preliminary discourse condition (24), which links the felicitous use of relational nouns in discourse to the salience of the individual they are related to by entailment. The two examples in (58) illustrate this: the discourse participant described with a relational noun is first introduced together with the individual it is related to, and then, since that individual continues to be salient, the noun can be used without an overt connection to that individual.

(58) a. On the fourth day, **the girl called her sister**, knowing it wasn't a good time for her. She would be eating in a new restaurant with a new boy friend who was probably on the verge of proposing just at the moment **the sister** would have spotted someone cuter in the yellow streetlight outside.[14]
b. That's a tad extreme, but I'm seeing the suggestion more and more often that a missing Facebook account raises red flags. After a woman found out via Facebook that **a man who'd 'poked' her in real life had a long term girlfriend**, she turned to digital manners advice givers Farhad Manjoo and Emily Yoffe of *Slate* to ask whether she should tell **the girlfriend**. They said she should and then went on a digression about transparent romances in the age of Facebook.[15]

These two examples illustrate the two most straightforward ways English has to introduce

[14]Davies (2008); the Corpus of Contemporary American English will be henceforth cited as CoCA.
[15]https://www.forbes.com/sites/kashmirhill/2012/08/06/beware-tech-abandoners-people-without-facebook-accounts-are-suspicious/#3bccedf48f95

non-derived relational nouns into the discourse: possessive NPs, as in (58a), and *have*-sentences, as in (58b).

In this section I will put forward an account of relational nouns that takes into account the way they can be used in discourse and does not rely on their denoting two-place relations. I will consider them as one-place, relation entailing nouns. On this view, *sister* will be treated as a sortal noun, one that picks out a set of entities, like *woman*. The main difference between them will be how they can be felicitously used as a description of an individual in a discourse. Here is where possessive morphosyntax, and *have* in particular, plays a crucial role. Then, I will extend this treatment to the relations that are associated with sortal nouns, which are not relation-entailing but can be associated with relations in a similar way.

2.4.2. Notionally relational nouns

The traditional view of relational nouns, as made clear so far, treats nouns like *sister* or *handle* as two-place relations, i.e. the functions **sister-of** and **handle-of**, and they contrast with nouns that can be used to describe the same entities, such as *woman* or *thing*.

(59) a. $[\![\text{sister}]\!] : \lambda x \lambda y.\textbf{sister-of}(x)(y)$
b. $[\![\text{woman}]\!] : \lambda x.\textbf{woman}(x)$

(60) a. $[\![\text{handle}]\!] : \lambda x \lambda y.\textbf{handle-of}(x)(y)$
b. $[\![\text{thing}]\!] : \lambda x.\textbf{thing}(x)$

Focusing on the contrast between *woman* and *sister*, we should note that, despite the alleged type-theoretic difference, they both can be used as predicative NPs –a position suited to $\langle et \rangle$-type entities.

(61) a. Mary is a nice woman
b. Mary is a nice sister

The most obvious way to account for the grammaticality of the predicative use of *sister* is to posit that something like Barker's detransitivizing operator applies, yielding (62).

(62) $[\![\text{DETRANS}(\lambda x \lambda y.\textbf{sister-of}(x)(y))]\!] : \lambda x \exists y.\textbf{sister-of}(x)(y)$

The crucial difference between *woman* and *sister* arises when we try to use these nouns in NPs identifying discourse referents (as noted by Landman (2004)).

(63) a. When John entered the shop, he saw that there was a woman/#sister behind the counter
b. Yesterday John kissed a woman/#sister

The only verb we can use unproblematically to introduce an entity described by a re-

lational noun into the discourse is *have*.[16] Still, in these sentences another difference between the two classes of nouns shows up: (64a) expresses an unambiguous relation, whereas the one expressed by (64b) needs to be contextually valued. In addition, we have, of course, the putative contrast in (65), the definiteness effect, around which the literature reviewed in chapter 1 orbits.

(64) a. John has a sister
b. John has a woman

(65) a. #John has the sister
b. John has the woman

As I have made clear so far in this dissertation, I do not question that there is a difference between *sister* (a notionally relational noun) and *woman* (a sortal noun). The former only makes sense in relation to another entity: one needs to have a sibling to be *a sister*. However, I want to argue that the data in (61), (63), (64) and (65) do not *force* us to posit a difference in logical type –a difference that (i) introduces a complication in *have*-sentences that decades of research have not been able to work out; and (ii) does not always adequately explain the phenomena that have been argued to follow from it.

The alternative view I want to put forward consists in treating notionally relational nouns as regular, one-place nouns, with the particularity that they have a meaning postulate associated with them.

(66) a. $[\![\text{sister}]\!] : \lambda x.\textbf{sister}(x)$
b. $\forall x_o \forall w[R_w(\textbf{sister}_{k_w})(x_o) \rightarrow \exists y_o \exists s[\textbf{siblinghood}_w(s) \wedge \textbf{Arg}_{1w}(y_o)(s) \wedge \textbf{Arg}_{2w}(x_o)(s)]]$

This meaning postulate entails that, for every entity which is a realization (R) of the type $\textbf{sister}_k$, there must be another entity with which it is in a certain relation: **siblinghood**. The point here is that part of knowing what the noun *sister* means entails knowing that it entails a siblinghood relation (and of course knowing what this relation means).

The connection between the relation and its arguments is made through the functions $\textbf{Arg}_1$ and $\textbf{Arg}_2$. **Siblinghood** imposes certain entailments on its arguments (following the view of thematic roles in Dowty (1989, 1991)). In this case we are dealing with a symmetric relation, so these entailments are the same for both arguments (e.g. 'shares biological parents with the other argument'). Other languages have nouns expressing siblinghood relations with further entailments on its arguments. As an example, Basque *ahizpa* ('sister to a woman') entails that $\textbf{Arg}_1$ of **siblinghood** is female, whereas *arreba* ('sister to a man') entails that $\textbf{Arg}_1$ is a male.

This account extends to all notionally relational nouns, like *handle*, used above.

[16] Beavers et al. (2009) point out that *want*, *give* and *get* also allow for this use of relational nouns –see 1.3.6. I will not discuss these cases here.

(67) a. $[\![\text{handle}]\!] : \lambda x.\textbf{handle}(x)$
b. $\forall x_o \forall w[R_w(\textbf{handle}_{k_w})(x_o) \rightarrow \exists y_o \exists s[\textbf{whole-handle}_w(s) \wedge \textbf{Arg}_{1w}(y_o)(s) \wedge \textbf{Arg}_{2w}(x_o)(s)]]$

In this case, the relation between a handle and the entailed entity is **whole-handle**, and it entails about its arguments that the value of $\textbf{Arg}_2$ plays a certain role in the configuration of the value of $\textbf{Arg}_1$ (e.g. it allows it to be handled by a human being in a certain way), that the value of $\textbf{Arg}_1$ is a physical object (i.e. it cannot be a human being, as in other subtypes of part-whole relationships –human beings have limbs and organs as parts, but not handles), etc.

Now we have an alternative way to model the fact that notionally-relational nouns are always connected to other individuals without having to make them denote two-place relations. Since they are of type $\langle et \rangle$, their felicitous occurrence as predicative NPs is predicted. Predicative NPs are not used to introduce entities into the discourse or refer to those entities. It is in cases when this is intended that the infelicity of relational nouns is most obvious, as in (65) above. It seems that the problems start when we want to *introduce token discourse referents* with a relational noun: we cannot do so if the value of $\textbf{Arg}_1$ in the meaning postulate associated with the noun is not salient: an entity cannot be described with a relational noun independently of that entity.

We are, essentially, in the same situation as with deverbal nouns in Grimm and McNally's account. They accounted for the facts by putting forward the Event Instantiation Condition (57). Since the use of non-derived relational nouns seems to be subject to very similar constraints, I thus suggest the following discourse condition (which is an improvement over the preliminary (24) in section 2.3.2) as the one governing the felicitous use in discourse of non-derived relational nouns.

(68) **Non-derived Relational Noun Instantiation Condition**: The introduction of a token discourse referent for a relation-entailing individual *x* needs to be anchored to the relation it entails and to the discourse referent corresponding to the other participant in this relation.

The restrictions on the use of relational nouns are thus argued not to follow from purely semantic considerations (a type-theoretic distinction), but from a combination of semantic factors (these nouns are associated with a meaning postulate) and pragmatic ones (in the form of a restriction on how they can be used to introduce entities into the discourse and refer back to them).

This condition explains why the discourses in (58) in the previous section (one of them repeated here as (69)) are licensed: first the entity described with the noun *girlfriend* is introduced together with the anchored individual, and then the noun can be used by itself insofar as the anchored individual is still salient.

(69) After a woman found out via Facebook that a man who'd 'poked' her in real life **had a long term girlfriend**, she turned to digital manners advice givers Farhad

Manjoo and Emily Yoffe of *Slate* to ask whether she should tell **the girlfriend**. They said she should and then went on a digression about transparent romances in the age of Facebook.

The condition (68) confers a very clear role to possessive constructions in general, and to *have* in particular. *Have* provides the empty (stative) verbal mold needed to introduce these nominals into the discourse: by linking them to the other participant (i.e. the subject of *have*) in the relation they presuppose (which is the value adopted by the empty relation introduced by *have*). I will formalize this treatment in Chapter 4 using Discourse Representation Theory, but let me show the kind of interpretation for *have*-sentences that follows from this treatment. For illustrative purposes, I will use here (70) as a denotation for *have*.

(70) $[\![\text{have}]\!] : \lambda x \lambda y \exists s[R(s) \wedge \mathbf{Arg}_1(y) \wedge \mathbf{Arg}_2(x)]$

Note that according to (70) *have* contributes an empty relation *R* between its two arguments. Now take (71a) as an example. *Sister* is a relational noun, associated with the meaning postulate in (66b). It thus entails a **siblinghood** relation. In such cases, the value of R, following the Non-derived Relational Noun Instantiation Condition, will be set to **siblinghood**. Sentence (71a) will therefore correspond to the logical representation (71b) –I use, for convenience, a choice function to represent the indefinite NP.

(71) a. Mary has a sister
b. $[\![\text{Mary has a sister}]\!] : \exists s \exists f.\mathbf{siblinghood}(s) \wedge \mathbf{Arg}_1(\mathbf{mary})(s) \wedge \mathbf{Arg}_2(f(\mathbf{sister}))(s)$

It is the fact that *have* provides this empty template that explains the contrast with contentful transitive verbs. *Kiss*, for instance, is a relation with a very clear content. There is no context-dependent relation (i.e. something like *R* in (70)) in its denotation to absorb the relation that the the nominal *sister* needs to introduce into the discourse to satisfy the condition (68).

(72) #John kissed a sister

This account also makes a very clear prediction about what goes wrong in sentences with definite relational objects, such as (73a) and (73b).

(73) a. #Mary has the sister
b. #Mary has every sister

The Non-derived Relational Noun Instantiation Condition entails that the definite NP *the sister* in object position –with a presupposed antecedent– is felicitous only if the other argument of the **siblinghood** relation entailed by *sister* is salient in the context where (73a) is uttered. This excludes the possibility of this individual being Mary. This is why (73a) cannot be understood as asserting that Mary and 'the sister' in question are siblings. It does not, however, exclude that there is another relation between them –as desired, be-

cause (73a) can be used to assert that a certain relation provided by context holds between Mary and the other entity, i.e. it can have a contextualized-*have* reading.

The problem with (73b) is similar. I will assume that the restrictor of a quantifier carries a presupposition of existence, e.g. in (73b) a set of sisters is argued to exist independently of their 'possessors'.[17] This too clashes with condition (68), but allows for a contextualized interpretation of the sentence.

Summing up, I have introduced an account of the restrictions on the use in discourse of notionally relational nouns that does not need to logically represent them as two-place relations. I analyze them as one-place, relation entailing nouns, whose use in discourse is governed by the discourse condition (68). This view gives a crucial role to *have*, and naturally explains the definiteness restriction associated with relational nouns in the object position of this verb. Moreover, since these nouns are not transitive, they do not give rise to any complication in the semantic composition of *have*-sentences.

However, the view presented here relies on the noun (via a meaning postulate) providing a relation to fill the empty verbal template provided by *have*. I have illustrated how this happens with relation-entailing nouns. What about sortal nouns –i.e., nouns that do not entail relations and do not need other individuals to function felicitously in discourse? The next section deals with these.

2.4.3. Sortal nouns

Given the treatment of relational nouns presented in the previous section, and the fact that sortal nouns should not be associated with meaning postulates that turn them into relation-entailing nominals –because they are not relation-entailing–, two issues arise regarding the latter type of nouns. The first one has to do with how we can preserve the same treatment of *have* as an empty template that needs to be provided with content; the second one is whether there is a definiteness effect also with sortal nouns –something implicitly or explicitly denied by most accounts of existential-*have*, but defended by Tham (2006) (and, to some extent, LeBruyn et al. (2016)).

Let us start by considering sentences (74a) and (74b). They involve houses, cars, and dogs –the types of sortal concepts that seem to convey unambiguous relations in possessive constructions, as already noted by Barker (1995; see section 1.2.1). This salient interpretation is normally summarized as 'possession' or 'ownership': Mary is the owner of the big house and the fast car in question in (74a), and John is the owner of the relevant Collie in (74b).

(74) a. Mary has a big house and a fast car

[17] The relation between presupposition and quantification is a complex issue; not all accounts consider that there is a presuppositional difference between strong and weak determiners, and those that do consider that there is is such a difference do not necessarily agree on how this presupposition should be characterized. See e.g. Partee (1987), Diesing (1992), Heim and Kratzer (1998), Szabolcsi (2010) or McNally (submitted).

b. John has a Collie

The reason why this interpretation is so salient is the fact that our world knowledge tells us that it is fairly common for people to be connected to houses, cars, or dogs. Out of context, we have no reason to believe that Mary and John are understood in these sentences as anything else than 'default' adult human beings. The examples used in the literature about *have* overwhelmingly lack any context, but implicitly rely on this interpretation of their subjects as prototypical instances of the most salient kind they instantiate –in (74a) and (74b), people.

I have already introduced in section 2.3.2.4 the **person-house** relation as a way to capture the connection people have with the houses they live in –what we normally understand as their homes. If the person in question is treated as a default adult individual, as is the case in (74a) above, I will be more precise and refer to this relation instead as **default person-house**. Therefore, by default we understand (74a) as referring to a **default person-house** and a **default person-car** relation.

It so happens that, among the entailments these relations give to their arguments, there is one that implies that the human argument has some sort of legal right over the other argument, at least in capitalist societies. Hence the 'possessive' flavor of these sentences. Note that saying that all these sentences convey the same relation, **ownership**, would be a very rough way of capturing the facts. The relation we have with a car or with a dog have very little in common –save for the fact that we prototypically 'own' cars and dogs. Seeing this fact as a common entailment of the three relations illustrated by (74a) and (74b) (and of many other relations we have with the stuff around us) allows for much finer-grained distinctions between them.

What emerges from these facts is a view, already outlined in section 2.3.2.4, of a network of relations between types of things, which is part of our knowledge of the world. Note that I am focusing here on sortal nouns: I am talking about types of entities that can be mentioned freely in a discourse irrespective of any of these relations and the other individuals in them; in this respect they contrast with relational nouns. I will formally represent these relations between types in a way similar to meaning postulates –although technically they are not. For instance, (75) captures the fact that if something is an instantiation of the kind **default person**$_k$, then it may stand in a particular relation with an instance of the kind **house**$_k$. This relation is **default person-house**, and it imposes a set of entailments on its participants –in addition to the necessary features to be counted as instances of the relevant kinds.

(75) $\forall x_o \forall w[R_w(\textbf{default person}_{k_w})(x_o) \rightarrow \diamond \exists y_o \exists s[R(\textbf{house}_{k_o})(y_o) \wedge$
$\textbf{default person-house}_w(s) \wedge \textbf{Arg}_{1_w}(x_o)(s) \wedge \textbf{Arg}_{2_w}(y_o)(s)]]$

Houses, however, are related to kinds of human beings other than default persons. For instance, they are related to the kind **realtor** by a relation with completely different entailments.

(76) $\forall x_o \forall w[R_w(\textbf{realtor}_{k_w})(x_o) \rightarrow \diamond\exists y_o \exists s[R(\textbf{house}_{k_o})(y_o) \wedge$
$\textbf{realtor-house}_w(s) \wedge \textbf{Arg}_{1_w}(x_o)(s) \wedge \textbf{Arg}_{2_w}(y_o)(s)]]$

So, when we are faced with a sentence like (77), we need to consider (i) what the relevant kind is that the subject and the object of *have* are taken to instantiate in discourse, and (ii) what the relation between the instances of these two kinds is –information that is supplied by our world knowledge.

(77) Mary currently has one house

When hearing this sentence, we have to be able to retrieve from context what kind Mary is taken to instantiate here –is she just a default person, or is she a realtor *and* we are talking about her as such? This information will determine whether we should interpret (77) as (78a) or as (78b):

(78) a. $[\![(77)]\!] : \exists s \exists f.\textbf{default person-house}(s) \wedge \textbf{Arg}_1(\textbf{mary})(s) \wedge$
$\textbf{Arg}_2(f(\textbf{house}))(s)$
b. $[\![(77)]\!] : \exists s \exists f.\textbf{realtor-house}(s) \wedge \textbf{Arg}_1(\textbf{mary})(s) \wedge \textbf{Arg}_2(f(\textbf{house}))(s)$

One issue that arises here is whether these relations need to hold obligatorily or not. 'Having' a house is not a necessary condition for being a person, even though we normally assume that every person has a house. By contrast, being in the **realtor-house** relation with a set of houses at any given moment seems to be a defining feature of what a realtor is.[18] This, however, does not seem to have any consequence as to the felicitous use in discourse either of the noun *realtor* or of the noun *house*, aside from the fact that uttering a sentence that amounts to asserting this relation will be uninformative (e.g. *Mary, the realtor, has some houses*).[19]

A related point has to do with the limits to the relations *have* is able to express. Note that **default person-house** and the **realtor-house** relations cannot be reversed. *Have* cannot express a **house-default person** relation, even though this relation can certainly be imagined.

(79) #This house/apartment has a really nice guy

Data of this kind have frequently led to the idea that the subject of *have* needs to be somehow 'superior' to the object (in a somewhat unclear way). The issue is complex, but there are reasons to consider that this fact, rather than a built-in constraint on *have*, is more of a tendency, a byproduct of how we normally conceive of relations between types of entities. For some reason related to our world knowledge, we do not associate every

[18] Of course an individual can have a realtor's license, and can thus be called a realtor, without practicing. The point, however, still holds: to be able to describe such a person as a realtor we need to be aware of what the **realtor-house** relation implies, even if at a given moment there are no houses connected by this relation to that particular realtor.

[19] Such sentences might make sense in discourse in a derivative way. *Mary, the realtor, has some house* might be a perfectly legitimate conversational move intended to point out to the addressee that, if she is looking for a house, Mary is one of the people she could talk to.

house with the default individual that considers it his/her home in the same way as we associate default people with a house. However, we do associate houses with people who are their owners/residents. It seems that our common world knowledge does not grant us immediate access to a **house-default person** relation, but it does supply us with the more precise **house-owner** and **house-resident** relations.

(80) a. This house has a really nice owner
b. If the block across the way has noisy residents who like to party on their balconies at 4am on a Monday morning [...][20]

Similarly, some kinds of individuals are prototypically connected to buildings, and they allow for *have* sentences where the building in question is the subject:

(81) a. When Diocese of Scranton Bishop Joseph C. Bambera envisions the future of diocesan churches, he sees St. Patrick's Church in White Haven as a model. **The church has a priest**, the Rev. Michael J. Kloton, who also oversees Immaculate Conception, a separate, independent parish eight miles away in Freeland.[21]
b. Overall building cleanliness is wanting — **the building has a janitor**, but the cleaning is minimal[22]

Relatedly, Barker and Dowty (1993) focus on contrasts like (82a)-(82b).

(82) a. The dog has tail
b. #The tail has a dog

They justify such contrasts by extending Dowty's (1991) treatment of thematic roles as clusters of entailments of predicates on their arguments, and suggest two such clusters, **proto-part** and **proto-whole**, to explain what relations are/are not licensed in possessive NPs. Essentially, the relation will be licensed if the possessee can in some way be conceived of as a part of the subject. The view defended here suggests an alternative explanation. In (82b), the relational noun *tail* is used with a definite article, suggesting it has already been into the discourse, and by condition (68), this implies that the individual it is connected to is salient enough. The sentence asserts that this individual is a certain newly-introduced dog, thus leading to a contradiction. Sentence (82b) can be licensed if the tail is conceptualized as an independent entity, whose connection with a dog is seen as circumstantial (contrast *the tail of the dog* with #*the dog of the tail*), as in (83).

(83) I have a pet tail.
Or perhaps my tail has a pet me,
I'm not sure.

[20]http://www.abc.net.au/news/2016-02-19/mcclintock-tiny-apartment-life-isnt-so-bad/7180726

[21]http://citizensvoice.com/news/the-future-of-faith-diocese-relying-more-on-non-priests-to-run-parishes-1.1934733

[22]https://shouldyourent.com/apartments/canada/quebec/westmount/335-clarke-avenue-westmount-qc-h3z-2e7-canada/

The tail has a dog which it wags constantly,
Until I scold it or its dog.[23]

Summing up on this point, the data do not seem to point to an inherent limit on the relations *have* can express, or at least not one based on the 'superiority' of the subject over the object. However, it is clear that more research is needed to explain what exactly justifies the contrast between e.g. (79) and (80a). This point will arise again in connection to contextualized-*have* sentences in the next section. For illustrative purposes, (84) shows different relations dogs, as a kind, can be connected to.

(84) a. Traditional Blue Mountain foothill habitats in the Heppner area are providing poor success. **Hunters should have good dogs** (relation: **hunter-dog**)

b. Right now, **the shelter has 30 dogs** and 150 cats. Johnston wouldn't confirm rumours that Gomez left with a puppy, but he did say that the famous couple seemed to be more dog lovers than cat fans.[24] (relation: **dog shelter-dog**)

c. Studies show that a 40- to 50-pound sled dog can burn more than 10,000 calories a day when distance racing. "**I have 40 dogs** and go through probably 4,000 to 5,000 pounds of beef in six months during training season," Rau says.[25] (relation: **sled dog racer-dog**)

In (84a) and (84b), the subject NP describes the kind it instantiates. This does not have to be necessarily so. In (84c), the subject is a first person personal pronoun, but context makes clear that the subject is an instantiation of a sled dog racer, and that information is crucial to understanding the sentence.

So far in this section I have provided an explanation of the way the empty relation introduced into the discourse by *have* is given content when the object is a sortal noun. I said at the beginning that this was the first issue that needed to be tackled regarding sortal nouns. The second is the definiteness effect. Recall once more that the traditional view of *have* is based on accepting the contrast in (85), Tham (2006) being the only researcher that has fully questioned it.

(85) a. John has a/#the sister
b. John has a/the the dog

I will side with Tham's view that, as with relational nouns, sortal objects of *have* do change their interpretation if the determiner is definite/quantificational. To see why, let us recapitulate a bit. I have shown that relational nouns are relation-entailing: they entail the existence of another entity with which they are in a particular relation. They can only be used to introduce discourse referents if they are overtly connected to this individual and

[23] http://will.tip.dhappy.org/projects/unsorted/project/media/text/devo_a_tail_of_two_realities.txt
[24] Davies (2013)
[25] https://www.thefreelibrary.com/The+last+great+race%3A+the+1%2C100-mile+Iditarod+is+Alaska%27s+...-a0140709977

this relation. *Have* provides the scaffolding for that to be possible.

The view that emerges from this section is that sortal nouns lead a double life. On the one hand, they do not entail any relation, and can be freely used to introduce/describe discourse referents. This is what makes (86) possible. *Kiss* provides a contentful relation, and *dog* is just used to describe/identify one of the arguments in this relation, playing no role in defining what the *kiss*-relation means.[26]

(86) John kissed a dog

On the other hand, sortal nouns, as types, are part of a network of relations connecting them to other types. In that sense, they can be introduced into the discourse *insofar as they participate in these relations*. When someone utters (87), an individual is introduced that satisfies the sortal description *dog*, but it necessarily needs to be connected to a relation –which one will depend on the type instantiated by the subject.

(87) John has a dog

This relation will impose further entailments on *dog*; if the context tells us that the relation is **hunter-dog**, we should infer, for instance, that the dog is not a French Bulldog, or a Poodle, whereas this information cannot be inferred at all from (86). So in *John has a dog*, a dog is introduced *connected to a relation with another entity*, in a way similar to a relational noun. This makes (87) unambiguous: if this context is rich enough to let us know how we should interpret the subject, world-knowledge gives us one specific relation as the value of *have*. If context is not rich enough, we must resort to a default interpretation of the two kinds –and then we are able to infer an unambiguous relation as well. The contrast with (88) thus follows.

(88) John has the dog

The fact that the object is definite entails that it has been introduced before. There are two possibilities: that it has been introduced just as a sortal description, or in relation to another individual (not John). This 'deactivates' the possibility that the object NP can help provide a relation for *have*. This relation needs to come from context. That is why there is a strong intuition that (88) is not a felicitous way to convey a **default human-dog** relation between John and the dog in question.

In the next section I will deal with cases such as (88). I will call them 'contextualized-*have*' sentences. In these cases the fact that *have* provides an empty (stative) verbal mold is made use of in a different way. Instead of taking the value of a relation associated with the object, *have* takes the value of a relation that is salient in context.

[26]This would be the traditional view in formal semantics. There are, however, accounts defending that the arguments do play a role in determining the relation that holds between them. See Spalek (2014) for an overview and a concrete proposal regarding some verbs of change of state.

2.4.4. Contextualized-*have*

Consider the small dialogue in (89).

(89) a. –What about John?
b. –He has the noisy family, the two lovebirds, and the bearded hipsters

Out of context, it is hard to make sense out of (89). The definite article blocks the relational interpretation of *family*. We do not have a clue as to how to interpret John's relation to lovebirds or bearded hipsters; there is no immediately accessible relation that anchors the types **lovebird**$_k$ or **hipster**$_k$ to other entities.[27] Moreover, if there were such an interpretation, it would also be ruled out by the definite article.

However, if we embed (89) in a context where the maître of a restaurant is inquiring about how work on a particular evening is being divided among different waiters, (89) suddenly makes sense. Alternatively, if we embed (89) in a context where what is discussed is the distribution of groups of tourists among several guides, the dialogue makes sense too; but importantly it makes sense in a different way. What is crucial is that *have* is not introducing new entities into the discourse: it is relating entities which were already there.

Our restaurant context would provide many other *have*-sentences with an interpretation. (90) could be uttered by a waiter who wants to claim one of the dishes that the kitchen has just finished preparing.

(90) I have the roasted lamb

The same waiter could instead be the addressee of the same sentence when he gets to the table and asks which diner ordered which dish. In our context we could also hear (91), uttered by a customer who is complaining to the maître about how one of the waiters did his job.

(91) We had the tall guy with long hair and the couldn't-care-less attitude

In the context of a restaurant, several relations hold between the participants in the situation: waiters, diners, dishes, tables, chairs, cooks, and so forth. When we are in such a context, we take all these relations for granted. In the examples in this section ((89), (90), (91))), the key to their interpretation is identifying which of these relations is talked about.

This use of *have* has been called focus-*have* by Tham (2006), and heavy-*have* by LeBruyn et al. (2016). The latter assume it is a regular transitive verb, with the particularity that it introduces an empty, context-dependent relation. Tham goes a little bit further, tying this

[27] It bears clarifying that, although some things immediately come to mind related to the type **hipster**$_k$, like beards or checkered shirts, these relations arise when *beard* or *checkered shirt* are in the object position of *have* and *hipster* is in the subject, not vice-versa.

use to there being a salient 'open proposition', represented as (92) (with the *x* standing for an entity, not a free variable), where the entity saturating the first argument is argued to be in focus (2006: 146).

(92) $[_{OP}\lambda z.R(z)(x)]$

Let us adapt this idea to ((89), (90), (91))), repeated below as the (a) sentences; (96) is slightly adapted. The 'open proposition' is the (b) in each pair. Translated into our terms, each sentence would express the proposition in (c). The value of the empty relation introduced by *have* is filled with this open proposition, and does not need to rely on any entailment/relation associated to the object.

(93) a. John has the noisy family
b. $[_{OP}\lambda z.$**waiter-diner**$(z)($**john**$)]($**the noisy family**$)$
c. $\exists s.$**waiter-diner**$(s) \wedge$ **Arg**$_1($**john**$)(s) \wedge$ **Arg**$_2(\iota x.$**family**$(x) \wedge$ **noisy**$(x))(s)$

(94) a. I have the roasted lamb (interpretation 1)
b. $[_{OP}\lambda z.$**waiter-dish**$(z)(speaker)]($**the roasted lamb**$)$
c. $\exists s.$**waiter-dish**$(s) \wedge$ **Arg**$_1(speaker)(s) \wedge$ **Arg**$_2(\iota x.$**lamb**$(x) \wedge$ **roasted**$(x))(s)$

(95) a. I have the roasted lamb (interpretation 2)
b. $[_{OP}\lambda z.$**diner-dish**$(z)(speaker)]($**the roasted lamb**$)$
c. $\exists s.$**diner-dish**$(s) \wedge$ **Arg**$_1(speaker)(s) \wedge$ **Arg**$_2(\iota x.$**lamb**$(x) \wedge$ **roasted**$(x))(s)$

(96) a. We had the tall guy with a beard
b. $[_{OP}\lambda z.$**diner-waiter**$(z)($**john**$)]($**the tall guy with a beard**$)$
c. $\exists s \exists f.$**diner-waiter**$(s) \wedge$ **Arg**$_1(speaker)(s) \wedge$ **Arg**$_2(\iota x.$**guy**$(x) \wedge$ **tall**$(x) \wedge$ **with**$(f($**beard**$))(x))(s)$

Note that (93) refers to a **waiter-diner** relation, whereas (96) refers to a **diner-waiter** one. This is not an instance of a symmetric relation. Both relations entail different things of their two participants with respect to each other. The fact that *have* can be used to express both relations provides additional evidence against the claim that the subject of *have* needs to be somehow superior to the object –unless we want to claim that waiters and diners are both superior to each other.

All these examples escape the definiteness effect. The uses of *have* with relational and sortal nouns presented in sections 2.4.2 and 2.4.3 were related to the introduction of entities into the discourse. Contextualized-*have* sentences are not. They assert that certain entities stand in a particular relation that they do not contribute to defining. It does not matter if the entities are discourse new or not. This is why sentences such as *John has the sister* can plausibly get an interpretation: if the entity described by *the sister* has been introduced in accordance with the Non-derived Relational Noun Instantiation Condition, and if context provides a salient proposition, there is nothing problematic in it.

So far I have introduced three different uses of *have*. They all take advantage of the fact

that *have* introduces an empty relation into the discourse in slightly different ways. In the first use, a discourse-new relational noun was introduced, entailing a relation that *have* absorbed as its value. In the second one, a discourse new sortal noun was introduced, providing (by world-knowledge) a relevant relation coming from the relation it has, as a kind, to the kind in the subject position, that *have* absorbed as its value. The third use is contextualized-*have*, in which the specific interpretation of *have* does not depend in any way on its arguments, because the relation is provided by context.

Before concluding this chapter, I will briefly mention another use of *have* that sometimes appears in the literature, though it is Tham (2006) who singles it out most clearly. It has some particularities that deserve a separate treatment. She calls it control-*have*, which is the name that I will adopt. I will not, however, have much to say about it beyond recognizing its existence and briefly characterizing it.

2.4.5. Control-*have*

The 'control' uses of *have* show up in contexts such as (97) or (98):

(97) a. –The money was on that table a moment ago. Who took it?
b. –I think John has it

(98) a. –Hey, where is my stuff?
b. –Mary has your computer, and John has your lamp. I don't know about your phone though.

Control-*have* has two features that set it apart from the other uses of *have* discussed in previous sections. The first one is that, unlike with relational and sortal nouns (which are discourse new) and contextualized uses (in which the object is focused), the object of control-*have* is topical. It follows from this that the pronoun *it* (which is obligatorily interpreted as anaphoric) is accepted as an object without triggering a kind-level interpretation –something I will deal with in Chapter 3. Contrast (97) with (99) below, which is very odd (at least) either if we try to interpret it as 'Mary has a house too' or as 'Mary and John share a house'.

(99) ??/#John has a house, and Mary has it too

The second peculiarity of control-*have* is the one that gives it its name. Unlike the other uses of *have*, the subject of these sentences *has to* 'control' the object. This control relation cannot be an abstract one compatible e.g. with the way wholes 'control' their parts; rather, the subject needs to be an animate entity capable of exerting physical control over the object. Inanimate subjects are totally disallowed.[28]

[28]Recall that I am focusing on uses of *have* with simple NPs as objects. There are sentences like *The box has money in it* where the box is certainly conceived of as a location, but these examples crucially involve predicative material in the object of *have*. See Chapter 5.

(100) a. –Where is the money?
b. –#I think John's wallet/that box has it

This use of *have* is not universally available in languages with a *have*-verb. Mandarin Chinese, according to Tham, does not allow for it. It could be hypothesized that control-*have* is a derived use that takes advantage of the availability of *have* to absorb any relation between entities coming from context (illustrated by contextualized-*have* uses) and a generalization of the fact that, although it is not a built-in constraint on this predicate, in most relations expressed by *have*-sentences there is a sense of 'control' of the subject over the object.

Even if the relation between control-*have* and the other uses of the verb is not totally clear, it is relatively easy to understand the meaning of these sentences and to isolate their particular features. I will treat it as a non-core use of *have* and I will only talk about it occasionally in what is to come, although the issue clearly deserves more attention.

2.5. Summary

In this chapter I have provided an account of how three different kinds of *have*-sentences (with discourse-new relational nouns, with discourse-new sortal nouns, and contextualized-*have*) are interpreted in discourse. I have argued that the crucial factor is that *have* introduces an empty relation, and that the way this relation is provided with content is what explains the similarities and differences between these three uses of *have*. Furthermore, I have introduced a fourth use of *have* (control-*have*) and discussed its peculiarities, although it will not be so much the focus of attention in the next chapters as the other three uses.

I have also established a clear division between *have* with discourse-new objects (both relational and sortal) and contextualized-*have* uses. It might seem to follow from this distinction, and the way it has been framed in the discussion above, that a definite or quantificational object will automatically trigger a contextualized-*have* reading. Recall that this issue has already arisen in Chapter 1. In Chapter 3 I will take a closer look at the kinds of NPs one finds as objects of *have* and the interpretations they get. We will see that the presentational interpretation of *have* is not limited to NPs with weak determiners. What we will find provides further support for the idea that one of the primary functions of *have* is to introduce concrete entities into the discourse tied to discourse referents which are already there. The data I will review have generally been overlooked in the literature on *have*, but have been discussed in relation to existential sentences, particularly in English.

Chapter 3

Presentational arguments

3.1. Introduction

In Chapter 2 I have presented an account of how *have* sentences are interpreted. I have defended that these sentences introduce into the discourse an empty (stative) relation between its two arguments, and that the way this relation is filled with content varies with the relationality of the noun (whether it is notionally relational or sortal) and with contextual constraints (whether there is already a salient relation in the preceding discourse or not).

This view is based on considering that the difference between notionally relational and sortal nouns is not one of logical type, but rather one having to do with how the entities these nouns describe can/must be connected to other entities into the discourse by a certain relation. A corollary of this approach is that sortal nouns are also subject to a definiteness effect. I have so far talked talked about three kinds of *have*-sentences (four, if we count control-*have*, which I will not get into in this chapter): with discourse-new relational nouns, with discourse-new sortal nouns, and contextualized *have*. The former two are the ones in which *have* necessarily introduces an entity into the discourse, and which are subject to a definiteness effect. I will henceforth use the term 'presentational-*have*' as a cover term for these two uses of *have*, and I will refer to the argument in object position in such cases as the 'presentational argument'. I will keep the term 'contextualized-*have*' for the third use of *have*.

I have established in the previous chapter a very simple division between presentational and contextualized *have*: the former necessarily feature indefinite objects, the latter can have definite or quantificational ones. This is actually the kind of division that the literature on existential-*have* assumes. As it stands, however, this simple division will not be enough to cover all the data. Consider the sentences in (1).

(1) a. John has the girlfriend he always dreamed of
    b. Mary has the coolest friends

c. John has the legs of Leo Messi
d. Mary has had every kind of hairstyle

Assuming that the relation entailed by the relational noun *girlfriend* is **romantic relationship**, it is clear that (1a) asserts that this relation holds between John and another person who happens to be remarkably close to an idealized image he had always had in mind. Sentence (1b) asserts something about the entities Mary has a **friendship** relation with: they are the coolest. (1c) is not a contextualized-*have* sentence expressing some context-dependent relation between John and the entity corresponding to the actual legs of Leo Messi; it rather conveys information about the legs John has as a part of his body. Similarly, (1d) refers to Mary's actual hair, and not to a contextualized relation between Mary and kinds of hairstyle.

The definiteness effect is not an exclusive property of *have*. The construction that is most prototypically associated with the effect are existence assertions. The existential predicate in most languages is subject to some form or other of the definiteness effect, although most of the literature focuses on how it manifests itself in English *there be* constructions. It turns out that the literature on the existential construction in English has already identified a set of facts very similar to the examples in (1), and has developed more nuanced views of the definiteness effect which are capable of handling them. I will specially consider the approach by McNally (1992, 2009), which accounts for these facts by suggesting that the existential predicate in English is a predicate not of ordinary, token-level individuals, but rather of higher-level ones, modeled as entity correlates of properties (Chierchia (1984), Chierchia and Turner (1988)).

In this chapter I will focus on identifying which NPs can give rise to presentational-*have* uses, and I will do so by stressing the parallelisms (and differences) that exist between *have* and *there be* regarding the interpretation of the object of the former/pivot of the latter. However, I will argue that *have*-sentences and *there-be* sentences, despite all their similarities, have significant differences that call for different analytical strategies. I will show how the data supports the view of *have* I have defended in Chapter 2: in its presentational uses, *have* introduces an entity into the discourse which needs to be crucially related to the subject of the sentence.

The structure of this chapter is the following: In section 3.2 I will show that the distinction between presentational and contextualized uses applies to both *have* and *there be* sentences, and that the NP types that can beget presentational interpretations are largely parallel; section 3.3 will deal with the NPs that are excluded as presentational arguments, and section 3.4 with those that are accepted. In section 3.5 I will tackle some syntactic and semantic particularities of *there be* sentences related to scope, availability in subject contact-clauses, restrictions on relative pronouns and interpretations of pronouns. I will show that the same set of facts applies to *have*-sentences, and I will present an account for them. Finally, section 3.6 concludes.

3.2. Presentational and contextualized interpretations of *there be* and *have*-sentences

Presentational uses of *have* are those which necessarily entail the introduction of an entity into the discourse. That is exactly what *there be* sentences generally do as well. Both (2a) and (2b) thus result in the introduction of an entity (a specific dog) into the discourse.

(2) a. There is a dog
b. John has a dog

On the present account, the difference between (2a) and (2b) lies in that (2a) introduces a discourse referent picked out by the NP *a dog* in an *absolute sense*: it asserts that the relevant context contains an entity which is a member of the set denoted by the predicate *dog*. By contrast, (2b) introduces a discourse entity *relative to another discourse entity*, i.e. it introduces it insofar as it stands in a certain connection with another individual. In chapter 2 I argued that this relation is determined by how our world knowledge relates the types the subject and the object instantiate in the relevant discourse –and this relation will possibly impose further constraints in the object aside from being a member of the set denoted by *dog*/a realization of the kind $\mathbf{dog}_k$.

It is an obvious fact that, in contrast to *have*-sentences, relational nouns are not accepted as pivots of existential sentences, as illustrated by the contrast between (3a) and (3b).

(3) a. #There is a sister
b. John has a sister

This contrast is normally explained in terms of logical type: if we consider *sister* to be of type $\langle e, et\rangle$, (3a) will leave one of its argument positions unsaturated, but in *have* the relevant argument is available –and how to make it fit into the right slot is what triggered the research on existential-*have*.

The view defended here explains this contrast simply because the way a discourse referent is introduced in an existential sentence is incompatible with the satisfaction of the Non-derived Relational Noun Instantiation Condition put forward in Chapter 2. This condition ties the felicitous introduction of a referent described by a relational noun to its being overtly anchored to another discourse referent. *Have* provides the scaffolding for that, but not *there be*. The relational noun would need another argumental position in the predicate. However, if a possessive NP is used, the discourse constraints on relational nouns can be fulfilled, and the sentence will be licensed.

(4) There was a sister of John

However, I will not follow e.g. Keenan (1987), or syntactic accounts based on the work of Freeze (1992) and Kayne (1993), in considering (3b) and (4) as two separate surface manifestations of the same logical form or underlying structure (with an stipulated alternation between *have* and *be*). (3b) and (4) happen to have the same truth conditions because

both constructions can be used to introduce new entities into the discourse and they both satisfy, in different ways, the Non-derived Relational Noun Instantiation Condition. But on the present account, one is not derived from the other, nor do they share an underlying structure (see Chapter 5).

The point of the discussion so far is that, despite their differences (which follow from the view of relational and sortal nouns defended in Chapter 2), both *there be* and *have* have a presentational argument position that is used to introduce an entity into the discourse. There is, however, a group of *have*-sentences that do not have to do that, namely the ones that I have called contextualized-*have*. In fact, I have taken the label *contextualized* from the term applied by Abbott (1993) to the following type of *there be* sentences, which ostensibly flout the definiteness effect –the kind that is also widely known as the 'list'-reading of existentials (Rando and Napoli (1978)).

(5) a. Rounding out the team is my fortysomething wait staff Raylene and A. J. They are the older sisters of the group, telling the kids how they should and shouldn't live with the provocative certainty of a schoolyard bully picking a fight. **There's A.J.'s daughter, A.J. Two**, who works here when she's home from school. And then **there's my only hire**, the young, pierced, dyed-buttered-pop corn-yellow Dani who has the afternoon to dinner shift and has just moved in with her boyfriend, Luke.[1]

b. What are the public transportation options? Well, **there's the AirTrain to JFK**, which is sometimes criticized for being inconvenient[2]

c. Tiffany is told that the monsters are returning to the world because there is no one to stop them. Tiffany, then nine, considers this for a long moment. "**There's me**," she says.[3]

d. Is there anybody we can get to help clean up? Well, **there's everyone in the room**, for a start; and maybe we can get some of the people down the hall too.[4]

Abbott (1993) points out that what is at stake in these sentences is that 'there is a 'predicational slot' that the (definite) pivot is intended to fill' (1993: 42). This is the basis for Tham's (2006) focus-*have*, on which, in turn, I base contextualized-*have* (see 2.4.4). Simplifying somewhat, this information-structural aspect of the sentences in (5) could be represented as in (6).

(6) a. $\lambda x[\textbf{people-in-the-team}(x)]\,(\textbf{A.J.'s daugher})$

b. $\lambda x[\textbf{public-transportation-options}(x)]\,(\textbf{Airtrain to JFK})$

c. $\lambda x[\textbf{people-who-can-stop-monsters}(x)]\,(\textbf{Amy})$

d. $every\,x(\textbf{people in the room}(x))[\textbf{people-who-can-help}(x)]$

As happens with contextualized-*have*, contextualized existentials are not tied to introduc-

[1] CoCA
[2] CoCA
[3] CoCA
[4] Abbott (1993), example (20a))

ing discourse referents, but rather to asserting that an entity (which may or may not be part of the previous context) can be an argument of an open proposition. The facts, therefore, are very similar for *there be* and *have*. They both have presentational arguments bound to introduce entities into the discourse. However, in both cases this presentational component can be put on hold, and the two predicates can be used to assert that a certain entity (not necessarily discourse new) fills a slot in a relation which is salient in context. These are their contextualized interpretations.

In this section I have shown that there is a parallelism between the possibilities of interpretation of the object of *have* and the pivot in *there be* sentences. It is thus justified to group them under the term 'presentational argument'. Both verbs can also yield contextualized interpretations, provided some discourse conditions are met.

In (1) above I have presented some sentences which, in spite of having definite or quantificational objects, must be interpreted as instances of presentational-*have*. The literature on *there be* has faced the same issue. In the next two sections I will examine whether the insights coming from this literature can be applied to *have*-sentences, and how these insights shed light on the nature of *have*. I will start by defining which NPs are totally excluded from presentational-*have*, and then examine in detail those that are licensed. We will see that an opposition simply in terms of the so-called weak-strong distinction (Milsark (1977); see McNally (submitted) for an overview of this distinction and the different ways it has been characterized) is not enough to explain the data.

3.3. NPs excluded as presentational arguments in *there be* and *have*

The prototypical types of NPs that generally cannot function as presentational arguments correspond to those marked by determiners traditionally analyzed as 'strong', and they can be divided into definite and obligatory quantificational NPs. The # in the examples indicates semantic anomaly under a presentational reading; most examples can easily have a contextualized one.

The first type comprises NPs with a definite article, demonstratives, proper manes, personal pronouns, and possessive NPs. I will use relational nouns in the examples with *have*, because in such cases the violation of the definiteness effect is much more difficult to accommodate (as compared to sortal nouns) by giving the sentence a contextualized interpretation. Recall, however, that I am arguing that the effect holds with sortal nouns as well.

(7) a. #There is the/that table in the office
b. #I have the/that sister

(8) a. #There is Peter's table in the office
b. #I have Peter's friend

The second type of NPs that resist presentational interpretations are those which are obligatorily quantificational: *every*, *all*, *each*, *both*, *neither*, and *most*.

(9) a. #There is every/each/both/neither table(s) in the office
b. #I have every/each/both/neither sister(s)

In the next section we will see, however, that having a definite or obligatorily quantificational determiner does not always mean that an NP cannot get a presentational interpretation.

3.4. NPs accepted as presentational arguments in *there be* and *have*

In this section I will show that the sets of NPs that can be accepted as presentational arguments in *there be* or *have* are almost overlapping. I will first review the 'unproblematic' cases, i.e. NPs that are normally referred to as 'weak'.

3.4.1. Weak NPs

Given the fact that presentational arguments correspond to entities that are newly introduced into the discourse, it is expected that NPs with weak/indefinite determiners are the ones most easily accepted in these positions, since they carry no existence presupposition on the set of individuals they range over. The following list of subtypes of weak NPs as pivots is drawn from McNally (1992), as are most of the examples; the (b) sentences illustrate that the same determiners also yield presentational readings of *have*.

- Indefinite article

(10) a. There is a fly in my soup
b. Mary has a sister

- All cardinal determiners

(11) a. There are three/ten/a million things to think about
b. John has three/ten/a million friends

- Cardinal comparatives

(12) a. There were more red than blue flags flying above the castle
b. Mary has as many sisters as John/brothers

- Vague non-proportional determiners

(13) a. There were many/few explanations for his behavior
b. John has many/few friends

- The negative indefinite determiner

(14) a. There were no replies

b. Mary has no children

- Negative exceptives

(15) a. There was no child but Martha playing outside
b. John has no sister but Sue

Aside from these types of weak NPs, two other cases should be mentioned. One of them is indefinite-*this*, which yields presentational readings unproblematically both with *there be* and *have*.

(16) a. There was this one dog that kept chasing the cars on our street
b. John has this cousin that is always calling him

The other case comprises partitive NPs. These NPs single out a subgroup from a containing group. The rough generalization with *there be* seems to be that what matters is whether the containing group would be licensed by itself in the construction. The first possible combination is **strong group, strong subgroup**. These sentences are generally infelicitous in a presentational reading.

(17) a. #There were all of the ten boys waiting outside
b. #There were the two of the five teachers available

The next possibility is **strong group, weak subgroup**. These sentences do not yield presentational interpretations either.

(18) #There are two of the five teachers available

There are, however, examples where apparently strong groups are licensed (Abbott (1993)). They tend to be the strong NPs that are licensed anyway as pivots with presentational readings –see the sections below.

(19) a. There are some of those sweaters you like on sale downtown
b. There were a number of the usual complaints after the lecture

However, Abbott points out cases in which a combination strong group-weak subgroup is licensed even though the group NP could not be possibly licensed by itself.

(20) a. There are some of the people I was warning you about in the bedroom
b. Last week Jack was talking about people who write children's horror stories. There are some of those people in the bedroom right now.

The next logical combination is **weak group, strong subgroup**. Examples are scarce, but some can be found.

(21) There were all of 6 candidates present[5]

Finally, the combination **weak group, weak subgroup** generally allows for perfectly felicitous presentational readings, although some problematic examples can also be found, like those in (23).

(22) There were two of five teachers available

(23) a. ?There are three of many reasons they could use as an excuse
b. ??There are some of several kids playing outside

The data regarding partitives is thus quite involved, and different factors seem to be at play apart from the weakness/strength of the determiners involved. It is not my purpose to try to account for it. However, it is illustrative to compare the data above with the acceptability of partitives as presentational arguments of *have*. There seems to be a general ban on presentational readings, even in cases with weak subgroups like (24c) and (24d).

(24) a. #Mary has all of the three sisters/dogs
b. #Mary has two of the three sisters/dogs
c. #Mary has all of three sisters/dogs
d. #Mary has two of three sisters/dogs

The reason for the unavailability of presentational readings in (24) is straightforward. These sentences presuppose that there is a group of entities in the context that can be described by the predicates *sister* or *dog* independently of John. On the present account, that automatically rules out the presentational reading of *sister*. It rules out the presentational reading of *dog* as well. (24d) cannot mean (at least easily) 'of three (specific) dogs, two are in a **default person-dog** relation with Mary', or, alternatively put, 'two of three dogs are Mary's pet-dogs'.

The point seems to be that once we describe a group of entities with a sortal noun like *dog*, we cannot use a *have*-sentence to assert that these entities are linked to the subject through a relation connecting the kind *dog* with the kind instantiated by the subject of *have*. Put another way, an entity stands in discourse either as a sortal dog or a dog-in-connection-to-another-entity.

I have so far reviewed which NPs generally give rise to presentational interpretations of *there be* and *have*-sentences, and which do not. Among the latter, we need to distinguish between definite and obligatorily quantificational NPs. In section 3.4.2 I will present different types of definite NPs (not obligatorily quantificational) which produce straightforward presentational readings. In section 3.4.3 I will tackle other NP-types that do so even when they are quantificational.

[5]Example due to Louise McNally (p.c.)

3.4.2. Definite NPs accepted as presentational arguments

There are a series of definite NPs that are accepted in presentational-*have* and *there be* sentences without triggering a contextualized reading. Adapting the presentation of these data in McNally (1992) for existentials, I will divide these NPs into four categories: nouns expressing functional relations, exclamative superlatives, NPs with intensional modifiers, and relative modifiers. I will point out, for each case, the similarities and differences between the presentational arguments of *there be* and *have*.

3.4.2.1. Nouns expressing functional relations

Functional nouns –to which I have already referred in Chapter 1– are a subclass of relational nouns: those that denote functions that, for every situation and every individual in their domain, return one individual. *Mother* is a functional noun defined for living things. *Lid* is a functional noun defined for many physical objects, like pots or jars. *Smell* is a functional noun as well, and its domain are all concrete individuals (assuming all concrete things can potentially smell). The following examples come from Abbott (1993) and McNally (1992), although most of them can be traced back to previous sources (like Woisetschlaeger (1983)).

(25) a. There was the smell of liquor on her breath
b. There was the smell of pot all over the appartment
c. There was the air of a soldier about him
d. There was the lid to a jar on the counter
e. There was the mother of a student in the office

The availability of the presentational interpretation depends on the argument of *of* being indefinite. If we make it definite, the presentational reading is canceled, and only a contextualized reading can rescue the sentence.

(26) a. #There was the smell of the liquor on her breath
b. #There was the lid to the jar on the counter

McNally's explanation of the acceptability of this type of NP in existentials is that the definite article is not there to signal that there is an anaphoric antecedent for the NP in previous discourse, but to signal uniqueness of the value of the functional relation. In example (25d) it would be licensed by the fact jars have one lid, and only one. The NP is equivalent to *a jar's lid*.

The same kind of phenomenon is observed in *have*-sentences with functional nouns as objects. Since functional nouns are a subtype of relational nouns, this excludes sortal nouns: it is hard to interpret (27d) presentationally.

(27) a. The guy looks good for his age and has the body of an athlete[6]
b. Peppermint oil has the goodness of nutrients and minerals[7]
c. Pigs have the intelligence of a three year old child[8]
d. ??John has the dog of an old lady/an old lady's dog

Have-sentences, however, show a contrast with *there be*. If the internal argument is definite, a non-contextualized reading is still possible, as long as the NP can be interpreted as a description of a kind.[9] For instance, in (28a) we need to read *the body of Usain Bolt* as a way to describe a kind of body (e.g. tall, muscular, with long legs). The sentence then asserts that the subject's body can be seen as a realization of this kind too.

(28) a. The guy looks good for his age and has the body of Usain Bolt
b. Peppermint oil has the goodness of the mineral I was referring to
c. Pigs have the intelligence of the eight three-year-old children we compared them with

Since the data are different, my explanation for the use of these NPs with *have*-sentences will also be slightly different. Take, for instance, (27a). *Body* is a functional noun, ergo notionally relational. It entails a relation that I will call **human-body**. Following McNally, the use of the definite article would be to signal that, for every athlete in every situation, there is one and only one body each athlete has. It is unclear, however, how to then relate this body to the guy in question. That is, if we apply the same reasoning as in *the lid to a jar*, *the* would signal that an athlete has only one body. But (27a) does not assert that the subject is related to some athlete's body. It is about the subject's own body.

I will suggest an alternative explanation, in which functionality plays a role, but not exactly the same one as in McNally's analysis. It seems clear that there must be a functional relation between the types $\mathbf{body}_k$ or $\mathbf{intelligence}_k$ and the type of entity in the of-PP in cases like *the body of Usain Bolt* or *the intelligence of a three year old child* (like $\mathbf{athlete}_k$-$\mathbf{body}_k$ or or $\mathbf{three\text{-}year\text{-}old\ kid}_k$-$\mathbf{intelligence}_k$). If something is a realization of the kind $\mathbf{three\text{-}year\text{-}old\ kid}_k$, it will necessary be in a relation with a realization of a sub-kind of $\mathbf{intelligence}_k$. All three year old-kids have a certain sub-kind of intelligence (see footnote 9 on the amount interpretation of such sentences). If the noun in the object position of *have* is relational but not functional, the sentence is odd in a presentational reading.

(29) ??John has the sister of a rich kid/Paris Hilton

What the definite article signals in these cases is not e.g. that athletes in general, or Usain

[6]CoCA
[7]CoCA
[8]CoCA
[9]In (28c) there is a very salient reading that refers to the *amount* rather that the *kind* of intelligence. There are a few proposals in the literature defending that amounts/degrees should be treated as kinds. See e.g. Anderson and Morzycki (2015), Scontras (2017), or Mendia (2017). I will assume this possibility for sentences that favor an amount interpretation, without choosing between the analyses available in the literature.

Bolt in particular, have only one body. Rather, it signals that the type of entity described by the object NP needs to be understood as the realization of one kind. That is, Usain Bolt may be understood as the realization of many kinds (e.g. **muscular**$_k$, **long-legged**$_k$, etc), but what (28a) conveys is that the speaker thinks of the object NP as a kind of its own. Of course, what this kind (**body of an athlete**$_k$ or **body of Usain Bolt**$_k$) exactly consists of is generally not unambiguously defined, and can easily give rise to disagreement among the conversational partners, as illustrated in (30), based on (27a).

(30) a. Look at John: he definitely has the body of an athlete
b. You mean he is lean and strong?
c. He is, but I basically mean that he is 25 but looks 34. Haven't you noticed that top-level athletes always look older than they are?

The same is true for all the other examples in (27) and (28): the goodness of the mineral in question, or the intelligence of pigs, are not conceived of as multi-faceted entities which can be understood as the realization of many kinds, but as *one* kind which summarizes all the features that the speaker considers relevant.

Summing up, the explanation suggested here for definite NPs with functional nouns with a presentational interpretation boils down to considering them kind-denoting NPs. I will deal with these types of NP in section 3.4.3 (and in Chapter 4). The main idea, however, will be that they can occur unproblematically in the object position of *have* because they do not describe token-level individuals and, when they occur as a presentational argument, what the sentence does is introduce token-level discourse referents into the discourse (realizing the kind described by the object NP). The presentational nature of *have*, therefore, is allowed to carry out its normal function.

3.4.2.2. Exclamative superlatives

What Abbott (1993) calls 'exclamative superlatives' are also allowed as pivots of *there be* sentences without forcing a contextualized reading, although they are ostensibly definite.

(31) a. There is the most beautiful house for sale in the next block
b. There's the biggest pot hole on the left lane on the corner of Browne and 2nd!! Tax payers [*sic*] money not at work again![10]

Exclamative superlatives are also possible as objects of presentational-*have* sentences.

(32) a. He was the most talented student I ever had. He had the most amazing imagination.[11]

[10] https://www.facebook.com/SpokaneNews/posts/10153566762140706
[11] CoCA

b. I just had the craziest idea[12]
c. Nothing spectacular, but I did manage to have the cutest boyfriend in school in the sixth grade, so I'm not entirely hopeless[13]

What licenses the definite article in these *have*-sentences is uniqueness with respect to a certain situation. Take (32c) as an example. *Boyfriend* is a relational noun, entailing the relation **romantic relationship**. In every situation, this relation will hold between pairs of entities. The external arguments of these relations (the entities described by the noun *boyfriend*) can be ordered along a scale of cuteness, so for every situation, there will always be one individual that has the highest degree of cuteness (see e.g. Beck (2011) for a review of the relevant literature).

Example (32c) asserts that in one particular situation (the one in which the speaker was a student), among all the entities that qualified as *boyfriends* by being in a **romantic relationship** relation with another entity, the one that had this highest degree of cuteness was the one connected to her.

These sentences work in a way similar to the ones from the previous subsection. In both cases, the object of *have* does not describe a token-level discourse referent: it can either be a kind or an individual concept (see next section), and the *have* sentence asserts that a token individual enters the discourse connected to the subject in the relevant situation/world.

3.4.2.3. NPs with intensional modifiers

Other examples are allowed which have modifiers with an intensional component, like *necessary*, *expected*, *right* and *usual*. Some of the following examples are from McNally (1992) and Abbott (1993), but they hark back to Milsark (1974) and Woisetschlaeger (1983).

(33) a. There weren't the funds necessary for the project
b. There were the expected hoots and catcalls after the speech
c. He said he now believed, from his experience, that everyone's mental health would be better if there was the right person to 'offload' all their problems on to[14]
d. There was the usual crowd at the beach last Sunday

Examples with modifiers of this kind are not hard to come by in presentational-*have* sentences.

(34) a. Stick had the usual foreman's voice, one you could hear anywhere on the

[12]CoCA
[13]CoCA
[14]http://www.skynews.com.au/news/world/europe/2017/04/17/harry-admits-counselling-over-diana-s-death.html

job[15]

b. Ronald Reagan would not have done well on that test, but he had the right demeanor[16]

c. As wireless headphones, they also have the expected microphone on board to make or take calls when paired with your mobile[17]

d. Turkey has the necessary assets to be a soft power[18]

A modifier like *necessary* seems to be implicit in another subclass of sentences with a definite article, namely those with a purpose clause with *to* or *for*.

(35) a. Staford has the [necessary] arm and the intelligence to be a good NFL quarterback[19]

b. They either don't know better or they don't have the [necessary] intelligence to come up with something interesting[20]

The reason why these modifiers yield acceptable presentational sentences is similar to the one that licenses exclamative superlatives. *Necessary* and *right* require a (possibly implicit) purpose adjunct introduced by *to* or *for*. Consider the example (35a). Types of arm and types of intelligence are ordered along a scale. There is a certain threshold above which these types of arm and intelligence exceed the degree (of whatever property is deemed the most relevant, e.g. *strength*) that the speaker considers the minimum for the purpose at hand (e.g. making a good NFL quarterback). This set of kinds can be conceptualized as one unique kind, defined by the common traits of the sub-kinds that exceed this threshold. What (35a) asserts is that a token level arm realizing this kind is instantiated in connection with Staford, a connection that needs to be overtly expressed because *arm* is a relational; the same holds for *intelligence* in (35b).[21]

As with presentational-*have* sentences with possessive NPs in object position and exclamative superlatives, the key factor licensing these sentences seems to be that the definite NP does not describe a token-level individual in the actual world, but a kind or an intensional entity, i.e. a non-token-level entity, which can nonetheless correspond to token-level entities in a particular discourse.

There is a fourth class of sentences with definite articles: those with certain relative clause modifiers. We will see that their licensing can be accounted for in the same way.

[15] CoCA

[16] CoCA

[17] http://www.independent.ie/business/technology/reviews/marching-to-the-beats-of-office-headphones-34765989.html)

[18] CoCA

[19] CoCA

[20] CoCA

[21] Recall from fn 9 that I am assuming the view that amount readings can be subsumed under kinds.

3.4.2.4. Relative clause modifiers

Abbott (1993) suggests that examples like (36a) are felicitous presentational uses of *there be*, even though the same sentence without the relative clause modifier would not be. Similar naturally-occurring examples can be found, like (36b).

(36) a. There are those sweaters you like on sale
b. There were the obvious things you'd expect[22]

Similarly, we could think of a situation in which someone enters an ice-cream parlor and utters one of the examples in (37).

(37) a. There are the flavors I like!
b. There are the flavors John would dream of

Such examples are, however, relatively hard to come by in existential sentences. As objects of *have*, in contrast, they are quite frequent in corpora.

(38) a. I'd like to tell that ten-year-old Sarwat that at last he has the friends he was looking for[23]
b. Lower surgery for transsexual women is very successful overall but nothing will ever make you have the body you should have had[24]
c. By the time you are 50, you no longer have the face you deserve, but the face you can pay for[25]

A cursory corpus search suggests that the verb in the relative clause tends to be intensional, as in (38a), or contain a modal, as in (38b) and (38c). Other examples we have seen in section 3.4.2 contained the verb *have* without a modal. A common feature of these examples is they are object relative clauses. Some examples of subject relative clauses can be found, but they seem to be much rarer.

(39) It makes sense that kids today need to have the skills that will help them later on in life

The account for these examples follows that of the other NPs reviewed in this section. They seem to involve the assertion that a non-token-level entity is instantiated in the current context with respect to the subject of *have*. I will illustrate this with (38a). The verb in the relative clause is *look for*. In the worlds compatible with what Sarwat desires, he is in a **friendship** relation with a group of individuals, which he imagines to have certain features. This relation can be conceptualized as a relation between Sarwat and a certain type: the one that summarizes the common features of all the individuals connected to Sarwat in each of his desire-worlds. The fact that this type is unique licenses the definite

[22]https://www.theparisreview.org/fiction/6349/the-line-joe-dunthorne
[23]CoCA
[24]CoCA
[25]CoCA

article. Then what (38a) asserts is that this type of friend (*friend* being a relational noun) is instantiated in connection to him in the actual world –thus implying the introduction of token-level individuals which realize this kind in connection with Sarwat in the actual world.

In this section I have presented four cases of definite NPs that preserve a presentational reading of *have*: possessive NPs, exclamative superlatives, NPs with intensional modifiers, and NPs with certain relative clauses. All these NPs have in common that they describe entities which do not correspond to concrete, token-level discourse level discourse referents. They denote either kinds or individual concepts.

In the following section I will tackle NP types that not only allow presentational-*readings* when they are definite, but also when they obligatorily quantificational. The main class allowing for this will be, precisely, overtly kind-denoting NPs.

3.4.3. NP-types that cancel the definiteness restriction

There are two NP-types that are able to completely flout the definiteness effect both in *there be* and *have*-sentences. One is overtly kind-denoting NPs. The other comprises nouns such as *possibility, reason* or *chance*. I will address them in turn.

3.4.3.1. Overtly Kind-denoting NPs

The definiteness effect, as presented in section 3.2, affects definite NPs and obligatorily quantificational ones, i.e. those with determiners such as *every* or *most*. I have already shown that certain kinds of definite NPs can escape the effect. To these we should add overtly kind-denoting NPs –something that follows from the previous section, given that the licensing of some of the NPs reviewed there (see 3.4.2.1) relied on interpreting them as kind-denoting.

(40) There were the two types of aliens in this book[26]

What is more, overtly kind-denoting NPs can also appear unproblematically with a quantificational determiner and preserve a presentational interpretation.

(41) a. In the urban centres like Lhasa, Gyantse, or Shigatse there are most kinds of food available[27]

b. There was every type of vegetable imaginable. Between them Jack and Jalli recognized most of them, but there were others from planets that had not exported as far as Earth One or Raika.[28]

[26]http://www.goodreads.com/questions/810735-there-were-the-two-types-of-aliens-in-this/answers/444850-all-of-the-aliens-are

[27]http://tibettours.ca/

[28]Google Books

These facts were identified by Lumsden (1988), and were accounted for by McNally (1992) from the premise that kind-denoting NPs denote sets of types. For instance, potential denotations of the NP *kind/type/variety/class of dog* are sets like {**poodle**$_k$, **husky**$_k$...} or {**big dog**$_k$, **small dog**$_k$}, etc.

Such NPs are also naturally found in presentational-*have* sentences.

(42) a. Ellen has suffered from moderately severe asthma all her life, and as a result is unable to have most kinds of pets[29]

b. An intriguing possibility for testing AET's implications in a more equalized environment would be to compare males not with their biological and nonbiological fathers but with their biological and nonbiological uncles [...]. Because it is common for males to have both types of uncles, yet not to clearly distinguish between the two, a comparison between those two types of relationships might provide a cleaner test of the adaptive imperatives that NET suggests[30]

c. John has the three kinds of friends we were discussing

In cases like (42a) or (42b), what we have is quantification over sets of kinds, not tokens. (42a) is interpreted in context as the assertion that, for all kinds of pets, Mary is unable to have a **human-pet** relation with that kind of pet. Following the interpretation of kind-level NPs as objects of *have* outlined in section 3.4.2 (which will be fully developed in Chapter 4), this sentence will ultimately rely on considering situations where Ellen is in the relevant relation with a *token-level realization* of every kind of pet. The same applies to (42b): the quantifier quantifies over a set comprising two sub-kinds of **uncle**$_k$, and the truth of the sentence depends on male individuals being related to token-level individuals instantiating these two sub-kinds.

In sentence (42c) we do not have an obligatorily quantificational determiner, but a definite article. In section 3.4.2 we have seen cases where the definite article signaled uniqueness of a kind/individual concept. By contrast, (42c) shows the run-of-the-mill anaphoric interpretation of the definite article: it signals that the three relevant kinds of friends are part of the previous discourse. Again, the truth of this sentence ultimately relies on John being connected through a **friendship** relation to instances of these three kinds of friends; this interpretation will be formalized in Chapter 4.

To show how sentences with obligatorily quantificational determiners are interpreted, I will use sentence (43), a simplification of (42b) above, with the quantifier *both*, would correspond to a logical representation like (44) –assuming quantifier raising has applied.

(43) Mary has both types of uncles

(44) $both\, x_k[\textbf{type of uncle}(x_k)](\exists s[\textbf{person-uncle}(s) \wedge \textbf{Arg}_1(s)(\textbf{mary}) \wedge \textbf{Arg}_2(s)(x_k)])$

[29] https://www.women.com/emily/lists/10-fun-facts-about-ellen-pompeo-you-probably-didnt-know
[30] CoCA

The representation in (44) is in need of refining: the **person-uncle** relation holds between Mary and a *type*, not a token-level individual. This is not what we want: as already mentioned, Mary has concrete individuals as uncles, not types. This issue will be tackled in Chapter 4, when a dynamic account of how *have* sentences interact with the ongoing discourse will be developed. For the present purposes, I will just take it as a fact that sentences like (42a), (42b) and (43) have kind-level objects but end up introducing a token-level entity into the discourse. This issue will connect this analysis to that in McNally (1992, 2009), and also to treatments of kind-denoting arguments of non-kind-level predicates like Carlson (1977) or Chierchia (1998).

Let me, at this point, spell out the difference between the perfectly felicitous (43) and the degraded (45). The latter corresponds to the logical representation in (46).

(45) #Mary has both uncles

(46) $both\, x_o[\textbf{uncle}(x_o)](\exists s[\textbf{person-uncle}(s) \wedge \textbf{Arg}_1(s)(\textbf{mary}) \wedge \textbf{Arg}_2(s)(x_o)])$

The problem in (46) is that the quantifier presupposes that the discourse contains a set of uncles to start with. Nonetheless, by the Non-derived Relational Noun Instantiation Condition, this set can only be used in the discourse if the entities are saliently related to their entailed 'possessors' (i.e. the entities with which they are in a **person-uncle** relation). Only if they are, the use of the quantifier *both uncles* is felicitous. But in that case, (45) can only have a contextualized interpretation. This is, indeed, the case.

3.4.3.2. Other NPs denoting sets of types

A search on a large corpus such as the Corpus of Contemporary American English shows that the most frequent universally quantified NPs in the pivot position of presentational uses of *there be* are not, in fact, overtly kind-denoting NPs (i.e. those with *kind*, *type*, *class*, *variety*, etc). They are rather nouns like *reason*, *indication*, *chance*, and *likelihood*, illustrated in (47), together with others such as *evidence* or *possibility*.

(47) a. There is every reason to think that those forces are active everywhere in the universe
b. There is every indication that this is a growing problem
c. [I]f she stayed, there was every chance that Cy would learn the truth
d. If so, there is every likelihood that the 1990s will indeed see a two-speed Europe

For *have*, the most frequent occurrences show a remarkable overlap with those of *there be*: *reason*, *right*, *intention*, *opportunity*, *incentive*, *expectation* or *chance*. Some examples are shown in (48).

(48) a. We've had a growing automotive presence here and we have every reason to think it can continue

b. The Justice Department has said that Mrs. Clinton had every right to delete the e-mails
c. When he got elected, he had every intention of trying to bring everybody together behind him
d. I promise you that you will have every opportunity to examine them later

If we perform the same search with the definite article, the results are similar: *possibility*, *question*, *matter*, *issue* and *problem* are among the most frequent for *there be*, whereas for *have* we find *opportunity*, *potential*, *ability*, *right* and *power*.

I will focus on the noun *reason*. A reason is always a reason *to/for something*; let me assume, as an example, the complex predicate *reason to believe John is crazy*. McNally (1992, 2009) analyzes nouns like *reason* as sets of types, the same kind of denotation as overtly kind-denoting NPs. It seems, however, that *reason* is not a set of types of individuals, but of types of events (Carlson (2003), Gehrke (2015)). The set denoted by *reasons to believe John is crazy* could be a set of event kinds like {**seeing John acting like Napoleon**$_k$ **hearing John talking about UFO's**$_k$...}. As with kind-level NPs, these abstract individuals can be instantiated in discourse only in relation to a discourse referent, which in this case is an individual that has participated in concrete realizations of these event types. (49) and (50), then, have much in common.

(49) I have every kind of friend

(50) I have every reason to believe John is crazy

What is asserted in (49) is that all the kinds of friends taken to be relevant in a context have a token-level instantiation, and since these token level instantiations correspond to the notionally relational noun *friend*, they must be connected to the individual they are in a relation to, which, in this case, will be the subject of the sentence.

Similarly, (50) asserts that a whole set of event kinds (the one denoted by *reason to believe John is crazy*) is instantiated by corresponding event tokens. Event tokens can be argued to share with relational nouns the fact they need to be anchored to another entity: one of the participants in the token-level eventuality. These specific cases do not seem to be governed by the Non-derived Relational Noun Instantiation Condition, but by the Event Instantiation Condition in Grimm and McNally (2013). In (50), this requirement is satisfied: these event tokens have been instantiated 'anchored' to the sentence subject: he has participated in an event of seeing John acting like Napoleon, he has heard him talking about UFOs, and he therefore concludes that (50) is an adequate description of his beliefs. See Chapter 5 for other cases in which *have* takes event-denoting complements.

3.4.4. Interim summary

In this section I have reviewed the NP types that preserve a presentational interpretation in spite of being definite or, in same cases, obligatorily quantificational. The picture

that emerges from this review is the following. There seems to be a division between NPs which denote concrete, token-level entities, and those that do not. The latter can correspond to NPs denoting sets of *kinds* of entities (either individuals *–kind of friend–* or events *–reasons to believe John is crazy*) or NPs denoting individual concepts (like *the coolest friends*).

Recall that, if the object of *have* denotes a token-level individual, the Non-derived Relational Noun Instantiation Condition will guarantee that the definiteness effect holds. If the entity has a definite or obligatorily quantificational determiner, a contextualized reading of the sentence will be forced, and this will exclude the relation entailed by the relational noun or, in the case of sortal nouns, the relation that comes from relating the entity with the type of thing instantiated by the subject.

By contrast, if the object does not denote a token-level individual, then the definiteness effect does not apply, or at least not to the same extent. The reason is that *have* sentences, like *there be* sentences, are a way to assert that a certain type of thing, or a certain individual concept, is instantiated by a token-level discourse referent in the current context/situation/world. If this abstract entity is notionally relational, or a participant in a salient relation between types, then by virtue of the discourse condition governing the use of such nouns, only *have* can be used. If the entity can be used in discourse irrespective of its relation to any other entity, the use of *there be* is possible.

In this section I have already been hinting at some parallelisms between the account I am defending and McNally's (1992, 2009) analysis of *there be* sentences. McNally's account generalizes the idea that the pivot denotes a higher-level entity (i.e. not token-level) to all cases, even with apparently token-denoting NPs like *there is a woman waiting outside*. Her analysis models the pivot not as a kind, but as an entity correlate of a property, a notion drawn from the version of property theoretic semantics developed in Chierchia (1984) and Chierchia and Turner (1988), which in fact subsumes kinds. The basic idea is that, for every functional property (of type $\langle et \rangle$), there is a correlate of that property in the domain of individuals (see Chierchia (1998) for an adaptation of this idea to model-theoretic semantics and an explicit relation between entity correlates of properties and kinds).

McNally argues that the existential predicate in English is a one-place predicate that asserts that a certain entity correlate of a property is instantiated at the relevant index (x_p is a variable over entity correlates of properties):

(51) $[\![\text{there be}]\!] : \lambda x_p.\textbf{instantiate}(x_p)$

The interpretation of existential sentences is modeled in a dynamic Heimian framework which makes sure that a token-level discourse referent is introduced into the discourse as a result of adding an (affirmative) *there be* sentence, something that does not follow from the static logical representation in (51). This is achieved by assigning a special Context Change Potential (Heim (1982, 1983)) to *there be* sentences.

I have argued elsewhere (Bassaganyas-Bars (to appear)) that an analysis very similar to McNally's (modulo the modeling of the presentational argument as something more akin to Krifka's (1995) 'concepts') is adequate for *have* as well. Nevertheless, there is one crucial difference between the two accounts that suggests that this approach should be reconsidered. It has to do with the fact that McNally considers that *there be* is a contentful predicate, whereas in Chapter 2 I have presented evidence favoring the view that *have* denotes an empty relation which needs to be supplied with content. In Chapter 4 I will present a dynamic analysis (in Discourse Representation Theory) in which the importance of this distinction will be shown. There I will address the issue of how kind-level entities as objects of *have* can result in the introduction into the discourse of token-level discourse referents without having to assign a special Context Change Potential to *have*-sentences.

Before turning to the formalization of the analysis, I would like to address another set of data. McNally's reasons for positing a higher-level denotation for the pivot had to do, on the one hand, with the types of NPs that were accepted in this position. This is what I have been dealing with so far. On the other hand, her analysis was also motivated by some particular syntactic and semantic peculiarities displayed by *there be* sentences. I now turn to these particularities, some of which apply to *have*-sentences as well.

3.5. Syntactic and semantic peculiarities of presentational sentences

The literature on existential constructions has identified several particularities of existential constructions concerning their syntax and their possibilities of interpretation. Similar facts have been noticed in relation to *have*-sentences,[31] but a systematic comparison of the two constructions, which shows that the facts are essentially the same, has not, to my knowledge, been attempted so far.

This is what I intend to do in this section. I will focus on four features of presentational arguments: obligatory narrow scope, ability to license *that*-less subject contact clauses; rejection of *wh*-relative pronouns out of the presentational argument position, and kind-level interpretation of pronouns –the latter a feature of *have*, but not of *there be*.

3.5.1. Obligatory narrow scope

The pivot of the existential construction shows obligatory narrow scope with respect to negation and other operators, like modals, when it is not a necessarily quantificational NP. Presentational-*have* sentences are subject to this constraint too.[32]

[31] For instance, the obligatory narrow scope of *have*-sentences is discussed in LeBruyn et al. (2016), and the interpretation of pronouns in Myler (2014).

[32] There is a set of exceptions –which seemingly involves functional nouns– pointed out by Francez (2007, to appear) for *there be*, illustrated in (i), which applies to *have*-sentences too, as seen in (ii). In these cases, the presentational argument seems to be able to outscope the modal.

(i) a. There could be three outcomes to these elections
b. There can be three winners at this point in the race
c. There may be any number of endings to your script

(52) a. There isn't a table in the classroom / Mary does not have a sister
b. $^{ok} \sim > \exists$
c. $^{*} \exists > \sim$

(53) a. There must be a table in the classroom / Mary must have a dog
b. $^{ok} \Box > \exists$
c. $^{*} \exists > \Box$

McNally explains the facts by the lack of quantificational force of the pivot in her analysis (the $\exists$ used here to tease apart narrow and wide scope interpretations in the examples is used for purely illustrative purposes). There are, however, exceptions to this generalization. First, not surprisingly, kind-denoting NPs can have wide-scope with respect to negation and other operators:

(54) a. The food critic is annoyed because there will not be one particular variety of wine available, namely Zinfandel (McNally (1992), her (130a)).
b. $^{ok} \exists > \sim$

Also unsurprisingly, *have*-sentences behave the same way.

(55) a. John does not have one kind of friend that would come in handy right now (namely a computer geek one who can fix his laptop)
b. $^{ok} \exists > \sim$

3.5.2. Subject contact clauses

Subject-contact clause is the name usually given to *that*-less subject relative clauses. They are allowed to varying degrees in some dialects of English (e.g. Appalachian and Hiberno-English). Using data mainly from Doherty (1993), McNally (1992, 2009) briefly discusses Doherty's generalization that these relatives are allowed with nominals that 'do not introduce persistent discourse referents into the discourse model'.

Among the contexts that license subject contact clauses are some types of clefts, modal and intensional contexts (with *de dicto* readings), restrictors of quantifiers, some copular sentences, *there-be* and existential-*have* sentences. There is no dialect that allows them in extensional contexts (other than *there be* and *have*, which are commonly considered extensional).

(56) a. There's a man here can't speak English
b. I have an idea might work

(ii) a. These elections could have three outcomes
b. The race can have three winners
c. Your script may have any number of endings

Aside from applying only to some functional nouns, these cases also involve intensionality: none of these examples implies that any race can actually have three winners, any election can have three outcomes, or any script three endings in the same world. I will not discuss these data further here.

c. John is the only one can do it
d. It was Bill did it
e. I'd like to meet the man would play-act on Larry
f. I'm looking for someone speaks Irish well

On McNally's account, these clauses are possible in NPs that are interpreted as non-token-level entities. One way of not denoting a token-level entity is by denoting an entity correlate of a property, and that is what accounts for the acceptability of (56a), (56b) and (56c) –McNally analyzes the predicate nominal as an entity correlate of a property instead of an $\langle et \rangle$-predicate. She leaves the door open to considering NPs in the rest of the contexts (including NPs in intensional contexts) as entity correlates of properties, but does not make a concrete proposal in that direction.

As I already mentioned, I will not analyze the presentational argument of *have* as an entity correlate of a property. I will argue in Chapter 4 that this would be a possible analysis, but one that introduces more complications, without seemingly covering more data, than one that does not resort to entity correlates of properties. Focusing on subject-contact clauses, however, an alternative explanation which does not depend on having entity correlates of properties in one's ontology must therefore be provided. We probably do not have to deviate much from Doherty's idea that these clauses are possible in arguments that do not introduce persistent discourse referents.

Precisely one of the main points of the present analysis is that the entities in presentational arguments are not a way to refer to 'persistent discourse referents'. They are used to introduce them, but the presentational argument does not 'refer' to them as do arguments in non-presentational predicates. The presentational argument of *have* introduces an entity into the discourse that depends on another argument, and only makes sense in connection with this other argument. This amounts to a sort of 'referential incompleteness', and this might be what links the presentational argument of *have* to the rest of the contact clauses in (56). This is, admittedly, a somewhat inconclusive explanation and does not help to account for what exactly licenses subject contact clauses in general, and probably does not improve on McNally's account in that respect. At the same time, however, this explanation probably suffices to justify that the data in (56) is more of an argument in favor of the account I am defending here than a counterargument. More research, however, is needed on this point.

3.5.3. Relative clauses

Both *there be* and *have* sentences show the particularity that one cannot relativize out of the presentational argument by using *wh*-relative pronouns.

(57) a. The books ∅/that/*which there are on the table
b. The boyfriend ∅/that/*who Mary has
c. Every car ∅/that/*which Mary ever had

This restriction seems to weaken in contextualized-*have* cases, although native speakers do not generally find (58) with a *wh*-relative pronoun completely felicitous either.

(58) a. –So which of these cars will you give to John?
b. –The car that/?which John is going to have is the one with the big spoiler

These facts (in connection to existential constructions) have been related to so-called 'amount relatives' (Carlson (1977), Heim (1987), Grosu and Landman (1998), Sæbø (2013), Scontras (2017), Mendia (2017) a.o.). The idea is that these NPs do not describe a specific entity, but an amount. The following is a famous example from Heim (1987).

(59) It will take us the rest of our lives to drink the champagne ∅/that/*which they spilled that evening

McNally (1992, 2009) claims that relatives out of existentials should not be grouped together with amount relatives for two reasons. First, contrary to well-behaved amount relatives, they impose identity of individuals: for sentence (60) to be true, the speaker must have read the very same books that were on the table, not just the same amount of books. The same point can be made about *have*-sentences: the truth of (61) requires that I have read the specific books which are related to John, not just the same number of books.

(60) I read (all) the books there were on the table

(61) I read (all) the books John has

The second reason for not considering relatives out of existentials as amount relatives is that they are not forced to have definite or universal determiners expressing 'maximality', which is a hallmark of amount relatives. McNally mentions examples such as (62a), in which the NP containing the relative clause is a bare plural like *reasons*. An equivalent sentence with *have* is also possible (62b).

(62) a. Let's start with posting a summary of the things you don't believe in, the reasons you don't believe in them, and possible reasons there are to believe in them
b. ...and possible reasons you have to believe in them

McNally (2009) suggests that *wh*-relative pronouns have a sortal restriction: they can only bind token-level variables, not higher-level ones. A problem for this approach is that, on the most common assumptions about entity correlates of properties and kinds, they are both higher-level entities, yet one can extract relative clauses from argument positions of kind level predicates with *wh*-pronouns. The object of *invent* or *discover*, and the subject position of *be common*, are cases in point:

(63) a. There are other letters for the child to learn than those which Cadmus in-

vented[33]

b. Whittle, aged 40, stands proudly in 1948 next to a model of a prototype jet engine which he invented at Brownsover Hall[34]

c. ..and avoid the sort of chronic back and joint problems which are common in the industry[35]

Another problem stems from the fact that on McNally's analysis the object of contextualized *there be* sentences is argued to be higher-level too. If we apply this idea to *have*, the fact that the contextualized examples in (58) are not downright ungrammatical –or that at least represent an improvement over presentational cases– needs to be accounted for.

A possible explanation of the contrast along the lines of the analysis I am defending is the following. Let us use (64) as an example.

(64) #I do not like the/that dog which John has

I have argued that sortal nouns can be used to describe discourse referents in two ways: as purely sortal predicates (as in *John saw a dog*), without connection to any other entities, or as instances of a kind which is related in a prototypical way to other kinds (as in *John had a dog*, where the relation is e.g. **default person-dog**). In (64), *dog* as the head of the object NP is used in the former way, but the trace needs to correspond to the latter use of *dog*. There are two problems: first, there is a mismatch between the trace in the relative clause and the noun with which it is co-indexed, and second, the *wh*-relative pronouns do not seem to be able to bind arguments whose introduction is anchored to another discourse participant –for reasons I cannot fully explicate.

Of these two problems, the one connected to *wh*-relative pronouns seems to be the most relevant one. Substituting *that* or a null pronoun makes the examples acceptable.

(65) I do not like the/that dog ∅/that John has

Contrary to *who* and *which*, these two relative pronouns can bind a trace corresponding to a relation-introducing argument. There is still the problem of the different interpretation of the trace and the head of the NP. Maybe this mismatch is what makes (65) less idiomatic (or, at least, it makes its felicity conditions more restricted) than the equivalent *I do not like John's dog*. NPs extracted from presentational arguments would then be a somewhat degraded way to fulfill the Non-derived Relational Noun Instantiation Condition, as compared to *have*-sentences and possessive NPs. The issue remains for future research.

[33]http://voices.nationalgeographic.com/2011/11/17/walking-by-henry-david-thoreau/

[34]http://www.dailymail.co.uk/news/article-1379807/Frank-Whittle-Jet-engine-inventor-genius-shrank-globe.html

[35]CoCA

3.5.4. The interpretation of pronouns

Heim (1987) observed that the pronoun *it* is never accepted as a pivot, even though other pronouns are. She attributed this to the fact that *it* needs to correspond to an individual variable.

(66) a. [Talking about who/what can help:] There's me/you/us/her/them/this/that
b. ??There's it

McNally (1992) offers an alternative explanation. She suggests that the unacceptability of *it* stems from the fact that this pronoun is always interpreted anaphorically, and cannot get a deictic interpretation. This contrast is then related to the fact that, on her account, the pivot must be used to introduce a discourse-new (but maybe hearer-old) referent. The pronouns in (66a), which can be used deictically, can fulfill this function, in the sense that they can act to re-introduce into the discourse entities which are hearer-old but were not a salient part of the discourse at the point where (66a) is uttered. *It*, by contrast, cannot have this deictic interpretation, but only an anaphoric one (which requires a recent antecedent). This clashes with the requirement that the pivot be discourse-new.

In that respect, the behavior of *have* contrasts with *there be*: it is easy to find examples with *it* in the object position of *have*. One subset of the uses, which I will not address, are instances of control-*have* (see 2.4.5), where *it* gets its normal deictic interpretation: in (67), the pronoun refers back to the discourse referent corresponding to *the money*.

(67) Where's the money? Where is it? Who has it?

Presentational uses of *have* also allow for *it* in object position. However, its interpretation is not the same as in (67).

(68) a. –I like that car
b. –I think Mary has it

In (68), *it* refers to a *kind* of car. (68b) is not equivalent to *I think it is Mary's* or to *I think Mary owns it*. It rather asserts that Mary has a car of the same kind as the one pointed out by (68a). The reason why this is the only interpretation of (68b) is straightforward. In (68b), *it* is linked to the referent of *that car*. This sentence is presentational: it introduces a new individual into the discourse (in connection with Mary). *Car* is a sortal noun. Recall that in those cases, what matters to provide the relation introduced by *have* with an interpretation are the kinds of both the subject and the object. Let us imagine that in this sentence Mary is an instance of **default human**$_k$. The NP *that car* is an instance of **car**$_k$. *It* signals that the object of *have* should be co-indexed with *that car*, but what (68b) does is extract the kind this antecedent instantiates and use it to introduce a new token-level instance of that kind into the discourse, this time in connection with Mary. The result is that (68b) can only be understood as asserting a **default person-car** relation holding between Mary and *a different instance* (one whose life in discourse depends on its connection to Mary) of the kind of NP that the referent of *that car* in (68a) instantiates.

A salient subset of the uses of *it* in the object position of *have* involves cases where the pronoun is co-indexed with nouns denoting abstract entities, like *excess* in (69a), or property concepts like *skill* (69b) or *talent* (69c).

(69) a. Farming, he seemed to say, helped his family shed excess. "It hasn't fared well for us, excess," he said. "I choose not to have it anymore."[36]
b. (*Overheard*) It's a skill, and they don't have it.
c. –So you had a natural talent?
–Are you insinuating that I just have it like I have curly hair?[37]

The explanation for such examples follows from the analysis. *Excess*, *skill* or *talent* denote abstract entities which can be associated with token discourse referents (only) in connection to another entity. *Skill* is an abstract entity; *John's skill* describes a token-level discourse referent. The pronoun *it* thus has the same function as in (68) above, but the workings of *have* are illustrated even more clearly in such cases.

3.6. Conclusion

The first part of this chapter has been devoted to analyzing the full gamut of NP-types that occur as presentational arguments of *have*-sentences. I have shown that a simple division between weak and strong NPs (which is implicitly assumed in most of the literature on existential-*have*) does not account for all the data. We have seen that there are significant parallelisms between the NPs allowed as presentational arguments in *have* and the ones allowed as pivots of *there be* sentences. I have shown that the data supports the analysis developed in Chapter 2, given certain assumptions on the interpretation of non-token-level arguments. What exactly these assumptions amount to will be spelled out in Chapter 4, focusing on the interpretation of kind-level NPs.

In the second part of this chapter I have gone over some syntactic and semantic particularities of *have*-sentences which again show a behavior very similar to existential sentences. Again, the data supports the present analysis, or at least it is compatible with it. I have considered an account of *there be* sentences that was designed to cover all these facts, namely McNally (1992, 2009). This analysis entails treating the presentational argument of *there be* sentences (i.e. the pivot) not as a token-level entity, but a higher-order one (an entity correlate of a property). I have considered applying this analysis to *have*-sentences (as done in Bassaganyas-Bars (to appear)). I have rejected this possibility, for reasons that I have not made explicitly clear –because they are most easily explained in a dynamic framework, which is what the next chapter will offer.

In Chapter 4 I will lay out a formal account of how *have* sentences interact with the discourse in which they are uttered. *Have* is context-dependent in many ways, and making clear how a *have*-sentence gets an interpretation in different types of discourse situations is key to understanding why this predicate fulfills the functions it does, and what it is that makes it special.

[36] CoCA
[37] CoCA

Chapter 4

Have-sentences in discourse

4.1. Introduction

On the view developed in the previous chapters, *have*-sentences are context-dependent in at least three ways. First, the way we interpret them varies depending on the discourse status of their internal argument: if it is discourse-new, we (may) have a presentational sentence; if it is discourse-old (and token-denoting), we have what I have called a contextualized-*have* sentence. Second, if the sentence is an instance of presentational-*have*, and the object contains a sortal noun, we need to access information about the subject provided by the context: we need to know which kind the subject is taken to instantiate in the ongoing discourse. We also need to factor in the kind that the object is taken to realize. Third, if the sentence is an instance of contextualized-*have*, the context will be needed to retrieve a value for the relation introduced by *have* into the discourse. Additionally, if the object of the sentence is an individual concept or has to be interpreted as the description of a kind, we need to explain how the *have*-sentence ends up introducing a token-level individual into the discourse.

This context-dependency of *have* calls for a treatment that takes into account the evolving discourse in which *have*-sentences are introduced, and spells out how these sentences contribute to pushing the discourse forward. I will therefore cast the analysis in a dynamic semantic framework, specifically in Discourse Representation Theory (DRT), which is designed to model how each utterance is interpreted against a previous context and in turn contributes to update this context.

This chapter is organized as follows. In section 4.2 I will introduce the basic workings of DRT. In section 4.3 I will illustrate how *have*-sentences are interpreted in discourse. I will deal first with presentational-*have* cases, then I will tackle contextualized-*have*, and finally I will apply the account to sentences with non-token-level objects, focusing on *have*-sentences with kind-denoting NPs as objects. Finally, section 4.4 concludes.

4.2. Some basics of DRT

Discourse Representation Theory is a theoretical framework initially developed by Hans Kamp (Kamp (1981)) with a view to understanding the issues posed by tense and anaphora to purely Montagovian approaches.[1] In the course of the last decades it has extended its coverage to many semantic and pragmatic phenomena.

DRT, as a theory of the interpretation of sentences (and discourse), differs from classical Montague Grammar in two fundamental respects. First, it is a representationalist theory. Syntactic structures are mapped onto a level of representations called 'discourse representation structures' (DRSs). DRSs are claimed to correspond, to some extent, to the mental representations that we, as cognitive agents, use to interpret sentences as the discourse unfolds. This representational level, however, is the input to a model-theoretic interpretation, a feature which connects DRT to Montagovian accounts.

Second, DRT is a non-compositional theory. Not every expression introduces an object that can be naturally described as the meaning of that expression into the corresponding DRS (Geurts et al. (2016)). Pronouns, for instance, introduce only a discourse referent which needs to be bound to another referent already in the discourse; in the same vein, definite and indefinite articles do not have a 'denotation' as such, but are just conditions on how the referent of an NP relates to the existing context. Therefore, the principle that the meaning of an expression is a function of the meaning of its parts and the way they are combined does not apply systematically in DRT.

I will only introduce in this section as much DRT as needed for the purposes of the present chapter. For book-length accounts of DRT, see e.g. Kamp and Reyle (1993) or Kamp et al. (2011); for more succinct introductions, see e.g. Kamp and Reyle (2011) or Geurts et al. (2016). In the next section I will present the basic workings of DRT; it will be mostly based on Kamp et al. (2011).

4.2.1. Building DRSs and adding them into a context

Let us assume that (1) is the first sentence of a discourse.

(1) Taylor bought a car

In DRT, each utterance in a discourse is translated into a DRS. Construction rules are defined that build DRSs from syntactic structures (of whatever syntactic framework one is assuming) in a step-by-step fashion; these rules will not concern us here (see Kamp and Reyle (2011: 887-881) for an overview). The result of these rules is a representation with two parts: a set of discourse referents U_k and a set of conditions Con_k on these discourse referents (represented as open formulas of predicate logic). Ever since van der Sandt (1992), the construction of a sentence DRS is modeled as a two-step procedure.

[1] A related theory, File Change Semantics, was developed at roughly the same time by Irene Heim (1982).

First, a preliminary DRS is constructed. This preliminary DRS teases apart the presuppositional parts of the sentence (on the left) from the non-presuppositional ones (on the right). (1) does carry a presupposition: that the discourse contains an individual named Taylor. Therefore, the preliminary representation of (1) is (2).

(2) $\left\langle \left\{ \begin{array}{|c|}\hline x \\ \hline \textbf{Taylor}(x) \\ \hline \end{array} \right\} , \begin{array}{|c|}\hline y\ e \\ \hline \textbf{car}(y) \\ \textbf{buy}(e) \\ \textbf{Arg}_1(x)(e) \\ \textbf{Arg}_2(y)(e) \\ \hline \end{array} \right\rangle$

This utterance has to be evaluated against the context in which it is made. Presuppositions also need to be verified in this context. Since (1) is the first sentence of a discourse, this context will be empty.

(3) $\begin{array}{|c|}\hline \\ \\ \\ \hline \end{array} \left\langle \left\{ \begin{array}{|c|}\hline x \\ \hline \textbf{Taylor}(x) \\ \hline \end{array} \right\} , \begin{array}{|c|}\hline y\ e \\ \hline \textbf{car}(y) \\ \textbf{buy}(e) \\ \textbf{Arg}_1(x)(e) \\ \textbf{Arg}_2(y)(e) \\ \hline \end{array} \right\rangle$

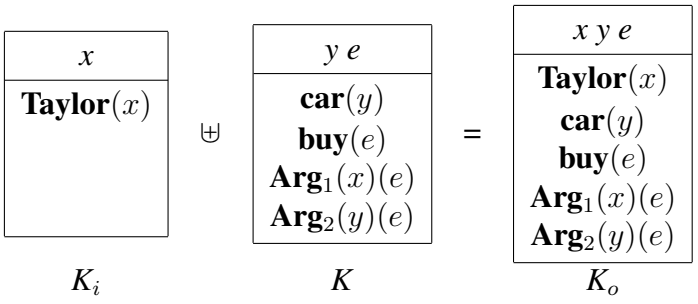
context *preliminary DRS*

Before merging the new utterance into the context, we need to verify its presupposition. In DRT proper names are generally assumed to automatically trigger accommodation: this means that context is assumed to contain an individual picked out by the proper name. So we will add this individual to the context. We will identify the DRS added into the discourse as DRS *K*, and the one corresponding to the context as K_i (*i* for *input*).

(4) $\begin{array}{|c|}\hline x \\ \hline \textbf{Taylor}(x) \\ \\ \\ \hline \end{array}$ K_i $\qquad$ $\begin{array}{|c|}\hline y\ e \\ \hline \textbf{car}(y) \\ \textbf{buy}(e) \\ \textbf{Arg}_1(x)(e) \\ \textbf{Arg}_2(y)(e) \\ \hline \end{array}$ K

Now that all the presuppositions have been verified, we can insert *K* into the context K_i. This operation is called 'merge' (represented with $\uplus$), and results in a new context, labeled K_o (*o* for 'output').

(5)



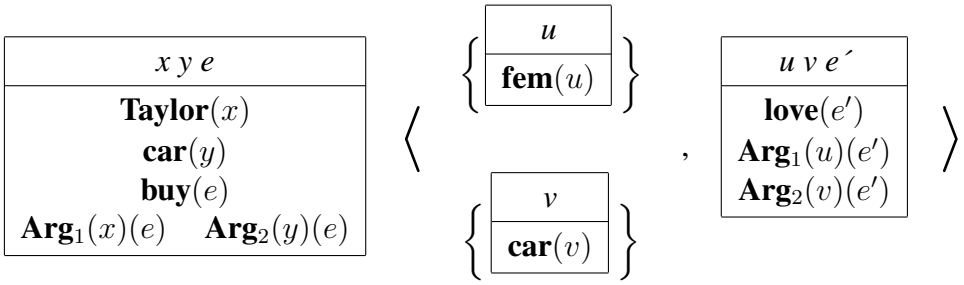
K_i K K_o

K_o is thus the new context, and further utterances will be evaluated against it: it will become K_i for the following utterance. Imagine the discourse continues with sentence (6):

(6) She loved that car

We apply the same procedure: this sentence is evaluated against K_i and a preliminary representation is built which makes the presuppositional content explicit. (6) carries three separate presuppositions: *she* is a pronoun which presupposes that an anaphoric antecedent can be found in context; furthermore, it presupposes that this antecedent is female. The NP *that car*, in turn, presupposes that context can supply an antecedent expression. So we get the following preliminary representation.

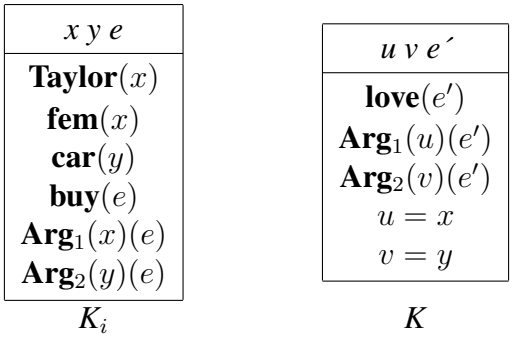
(7)



context *preliminary DRS*

Presupposition verification will result in (i) equating the presupposed discourse referents u and v to their antecedents in the context x and y, and (ii) the accommodation of the condition **fem** to discourse referent x (since so far we did not know whether the unisex name Taylor corresponded to a male of a female individual).

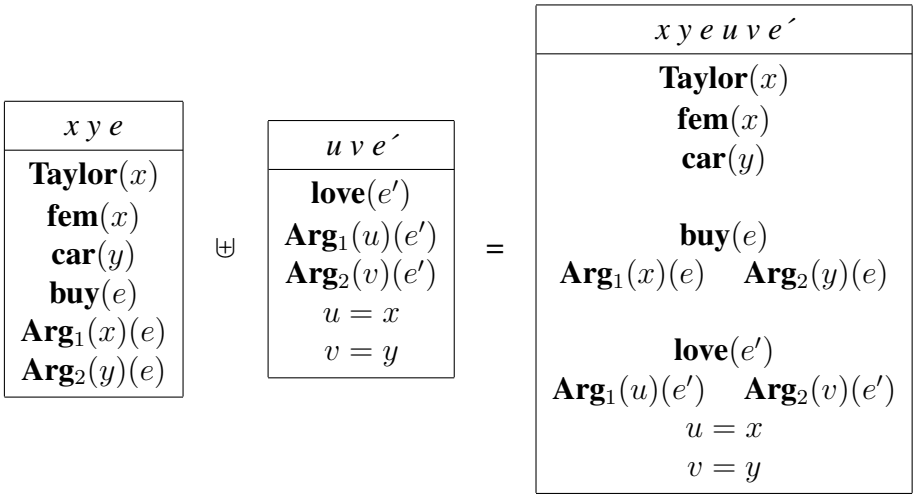
(8)



K_i K

We can now merge the two DRSs, and get a new DRS K_o, that will in turn serve as the context for subsequent discourse:[2]

(9)



K_i K K_o

4.2.2. Model-theoretic interpretation of DRSs

As mentioned above, DRSs are given a model-theoretic interpretation. This interpretation applies to *proper* DRSs, i.e. DRSs with no free discourse referents. Context DRSs are proper; preliminary representations may not be (e.g. discourse referents *x* and *y* are free in *K* in (9) above). Let us interpret DRS K_o from (9), with respect to an intensional model <W_M, U_M, $\Im_M$>, where W_M is a set of worlds, U_M is a non-empty set of discourse referents, and $\Im_M$ is the interpretation function. The interpretation of (9) makes crucial use of the notion of *embedding function*: (9) will be true if there exists an embedding function *f* (which can be seen as partial variable assignment) such that:

$f(x) = \textbf{Taylor}$
$f(x) \in \Im(\textbf{fem})$
$f(y) \in \Im(\textbf{car})$
$f(e) \in \Im(\textbf{buy})$
$< f(x), f(e) > \in \Im(Arg_1)$
$< f(y), f(e) > \in \Im(Arg_2)$
$f(e') \in \Im(\textbf{love})$
$< f(u), f(e') > \in \Im(Arg_1)$
$< f(v), f(e') > \in \Im(Arg_2)$
$f(u) = f(x)$
$f(v) = f(y)$

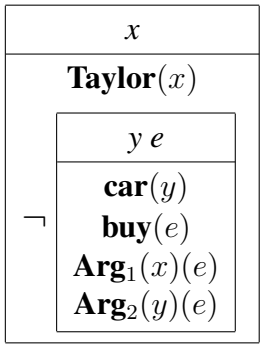
So far, this interpretation essentially amounts to considering each DRS a partial model; a

[2] An important feature of DRT is its treatment of temporal and aspectual relations between events. Since this is not crucial for my purposes, I will omit this part of the representation for clarity reasons.

DRS is true when there exists a homomorphism between this partial model and $\mathcal{M}$. This view has to be nuanced, however, when considering negated sentences and sentences involving quantification. These sentences introduce so-called *complex conditions*, which involve the addition of sub-DRSs to the main DRS. Glossing over the details, the addition into an empty context of sentence (10), the negation of (1) above, will result in the updated context (11):

(10) Taylor did not buy a car

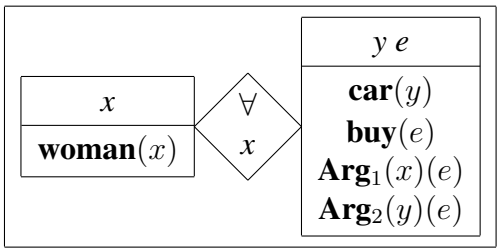
(11)



We will call the main DRS *K*, and the embedded DRS K_1. The truth of *K* depends on a relation between embedding functions: an embedding *f* will verify *K* iff there is no embedding *g* which is an extension of *f* (written $f \subseteq g$) that verifies the conditions in K_1. For $f \subseteq g$ to hold, the domain of *g* needs to include the discourse referents in the domain of *f* and assign the same value to them, and assign a value to new discourse referents that were not in the domain of *f*. The situation is similar with quantificational NPs. (12) will be represented as (13):

(12) Every woman bought a car

(13)



We will call the main DRS *K*, the DRS corresponding to the restriction of the quantifier K_1, and the one corresponding to the scope of the quantifier K_2. The truth of *K* will depend on the existence of an assignment *f* such that, for all extensions *g* of *f* which verify K_1, there is an extension *h* of *g* which verifies K_2.

The notion of a verifying embedding function for a DRS (whether a main or a sub-DRS) is captured formally in (14) (Kamp et al. (2011)):

(14) $< g, h > \models_{M,w}$ <U,Con> iff $g \subseteq_U h$ and for all $\gamma \in$ Con: $h \models_{M,w} \gamma$

In prose, a pair of embedding functions *g*, *h* verify <U,Con> in $\mathcal{M}$ at world w iff *h* extends *g* with the discourse referents in U and *h* verifies all the conditions in Con in $\mathcal{M}$ at world w. The notion of truth of a DRS is defined with respect to the empty assignment (represented as Λ), since the notion of truth applies only to proper DRSs:

(15) Truth of a proper DRS K in a model $\mathcal{M}$:
$\models_{M,w}$ K iff there exists an *h* such that $< \Lambda, h > \models_{M,w}$ K

Thus, a proper DRS is true in $\mathcal{M}$ at a world *w* iff there exists a verifying embedding with respect to the empty assignment, i.e. if there exists an assignment *h* which assigns a value to all the discourse referents in *K* that verifies all the conditions in *K*.

4.2.3. Information states and Context Change Potential

As mentioned above, one of the hallmarks of dynamic semantic theories is their view of sentence meaning as context update. Instead of thinking of the meaning of a sentence *S* as the set of worlds where the sentence is true, dynamic semantic approaches model it as the possibilities a sentence has to take a discourse from the state it was in prior to the utterance of *S* to a new state that results from having uttered *S*. The meaning of a sentence in DRT is identified with its *Context Change Potential* (CCP), a term that Kamp et al. (2011) adopt from Heim (1982): a function from *information states* to *information states*. Let us illustrate it with a simple example, based on the initial discourse in (1) above, repeated here (16):

(16)

x
Taylor(x)

K_i

$\uplus$

$y\ e$
car(y)
buy(e)
Arg$_1(x)(e)$
Arg$_2(y)(e)$

K

=

$x\ y\ e$
Taylor(x)
car(y)
buy(e)
Arg$_1(x)(e)$
Arg$_2(y)(e)$

K_o

The context DRS K_i describes an information state. Information states are defined formally in (17) (Kamp et al. (2011: 157)).

(17) Given a proper DRS *K*, the information state $[\![\text{K}]\!]^s_M$ expressed by *K* relative to an intensional model is defined as
$[\![\text{K}]\!]^s_M := \{< w, f > | < \Lambda, f > \models_{M,w} K\}$

The information state expressed by K_i is the set of world-embedding functions pairs such that the embedding functions make K_i true. In this case, $[\![\text{K}_i]\!]^s_M$ expresses a set of world-embedding function pairs such that this embedding function assigns the discourse referent *x* to the individual **Taylor**. Now take K_o, a proper DRS as well. $[\![\text{K}_o]\!]^s_M$ will be the set of world-embedding function pairs such that the embedding function in each pair not only assigns *x* to the individual **Taylor**; it also has to assign *y* to an individual in the extension

of **car**, and so forth, so that all the conditions in Con_{K_o} are verified. The CCP of *K* is the function from information states to information states such that $\text{CCP}_K([\![\text{K}_i]\!]^s_M) = [\![\text{K}_o]\!]^s_M$.

The definition of Context Change Potential is (18) (Kamp et al. (2011: 159)):

(18) The *Context Change Potential* (or the dynamic semantic interpretation) $[\![\text{K}]\!]^d_M$ of a DRS *K* relative to a model $\mathcal{M}$ is defined as a partial function from information states to information states such that:

1. $[\![\text{K}]\!]^d_M$ is defined for those information states *I* relative to $\mathcal{M}$ such that FV(K) $\subseteq \text{X}_I$
2. if $I_i \in \text{Dom}([\![\text{K}]\!]^d_M)$, then $[\![\text{K}]\!]^d_M(\text{I}_i) = \{< w, g > | \exists f(< w, f > \in I_i \wedge < f, g > \models_{M,w} \text{K})\}$

Condition 1 in this definition states that the context change potential of a DRS *K* is defined for information states that include in their universe the discourse referents that are free in *K* (FV(K)). That is the case in (16) above: *x* is free in *K*, but it is one of the discourse referents in U_{k_i}.

Condition 2 states that if an information state I_i is indeed defined for a DRS *K*, the value of the CCP-function with I_i as its argument will be a new information state consisting of the set of world-embedding function pairs <*w,g*> such that (i) *g* is an extension of a function *f* that validated the previous information state K_i, and (ii) *g* validates *K* in *M* at world *w* (with respect to *f*).

The context change potential of (16) above will thus be a function that takes us from the set of world-embedding pairs <*w,f*> such that *f* validates the condition **Taylor**(x), to another set of world-embedding pairs <*w,f*> such that *f* not only verifies **Taylor**(x), but also verifies all the conditions in K_o.

4.2.4. Introducing sortal distinctions into the DRSs

In the previous section I already used two different types of discourse referents in the DRSs: individuals and eventualities. The former are represented by variables *u*, *v*, *w*, *x*, *y* and *z*. I have represented the latter with *e*, *e´*, but I will henceforth distinguish between events and states. Events will still be represented as *e*, *e´*, *e´´*, etc. States will be represented with *s*, *s´*, *s´´*, and so on.

A crucial part of the present analysis of *have* relies on the interpretation of the NPs as either token- or kind-denoting. I will make this differentiation explicit in the DRSs. Token-level discourse referents will bear the subscript *o* (for 'object'). The DRS corresponding to (19) will thus have the representation in (20).

(19) A woman bought a car

(20)

x_o y_o e
woman(x_o)
car(y_o)
buy(e)
Arg$_1(x_o)(e)$
Arg$_2(y_o)(e)$

Kind-level discourse referents will be represented with the subscript *k* (for 'kind').[3] The realization relation *R*, familiar from the literature on kinds (e.g. Krifka et al. (1995)), will be used as a discourse condition. The sentence (21) corresponds to the DRS in (22):

(21) Dogs are widespread

(22)

x_k s
dog(x_k)
widespread(s)
Arg$_1(x_k)(s)$

In the analysis that follows I will use the information that an individual like Mary is used in discourse as a realization of a certain kind, e.g. as an architect. I will represent this as in (23):

(23)

x_o x_k
Mary(x_o)
architect(x_k)
$R(x_k)(x_o)$

4.2.5. Treatment of plurals

So far I have dealt with discourse referents corresponding to individual entities or quantified NPs. Definite and indefinite plural NPs cannot be reduced to such cases: in (24), we only have one NP, but as a result of uttering that sentence, two different entities need to be available as discourse referents –together with a discourse referent comprising both, that can be e.g. the antecedent for a pronoun *they* in subsequent discourse.

(24) Taylor bought two cars

DRT deals with plural NPs by introducing discourse referents corresponding to sets (of two or more elements). These discourse referents are represented with capital letters. The cardinality of the set is introduced as a discourse condition. The result of adding (24) to

[3] In this sense the analysis slightly differs from the view in Kamp and Reyle (1993: 391-397), where kinds where analyzed as 'non-individual discourse referents', i.e. sets (although they acknowledge (fn 39) that this is 'not really tenable, as genera are not simply sets').

an empty context is represented in (25):

(25)

$x_o\ Y_o\ e$
$\mathbf{Taylor}(x_o)$ $\mathbf{car*}(Y_o)$ $\lvert(Y_o)\rvert = 2$ $\mathbf{buy}(e)$ $\mathbf{Arg}_1(x_o)(e)$ $\quad$ $\mathbf{Arg}_2(Y_o)(e)$

The function of the asterisk * is to turn 'the predicate of individuals that is expressed by a noun N into a predication N* of sets which is true of a set X if each member of X satisfies N' (Kamp et al. (2011: 182)).[4]

At this point we already have all the necessary ingredients to tackle the analysis of *have*-sentences and to spell out how they affect the discourse in which they are uttered. In the following section I will provide a formalization of the idea that the key to the interpretation of *have*-sentences are the different ways in which it can get content for the unspecified relation it introduces into the discourse.

4.3. *Have* sentences in discourse

In Chapter 2 I argued that *have* introduces a contentless relation into the discourse, and that the way it gets content depends on various factors. If the object of *have* is a discourse-new NP, in a context where no salient relation is available to give content to *have*, the *have*-sentence gets a presentational reading. In these cases, the way the relation is filled with content depends on whether the noun heading the NP is relational or sortal. If, by contrast, context does already supply a relation, a contextualized-*have* reading results, and the information-structural status of the NP is irrelevant to the interpretation of the sentence.

In Chapter 3 I presented a fine-grained view of the data concerning the types of NPs that are accepted as objects of *have* in presentational readings. I showed that there are remarkable parallelisms with the NPs that are accepted in *there be* sentences without triggering a contextualized (or 'list') reading. I pointed out that one way to go could be adapting McNally's (1992, 2009) analysis of these facts for existential sentences, which consists in analyzing the pivot of the existential predicate as a higher-level entity (an entity correlate of a property), to *have*-sentences. I argued, however, that the data concerning *have*-sentences can be explained without appeal to the notion of entity correlate of a property.

[4] Kamp et al. equate the asterisk with a DRS condition like (i):

(i)

x_o	every x_o	$\mathbf{car}(x_o)$
$x_o \in X_o$		

In this section I will show how *have*-sentences interact with the ongoing discourse. I will start with presentational-*have* uses. I will then illustrate how an analysis based on higher-level entities might work (as attempted in Bassaganyas-Bars (to appear)). We will see that, while the analysis is theoretically possible, it becomes more involved and requires more stipulations, without seemingly covering more data, than one that does not treat all objects of *have* as higher-level entities. In order to be able to show how the latter analysis would work, I will first introduce the notion of 'presentational Context Change Potential'.

4.3.1. Presentational Context Change Potential

McNally (1992) argues that a simple *there be* sentence like *there is a woman* entails the addition into the discourse of *two* new discourse referents: one corresponding to the higher-level entity 'woman' (modeled as a entity correlate of a property), and the other corresponding to a token-level realization of this higher-level entity. If the existential sentence has a coda (which McNally analyzes as a predicative modifier), its truth will depend on whether this token-level discourse referent, not the entity correlate of a property, has the property expressed by the coda. This is stipulated to be a particular feature of existential sentences, which partially explains their behavior (McNally (1992: 81)).

McNally (1992: 114) models this feature of existential sentences in a Heimian system by assigning a special Context Change Potential to existential sentences. This CCP makes sure that the assignment functions satisfying the context after the existential sentence has been added to it assign a value to the 'extra' token-level discourse referent introduced by the sentence, and that this value is in the extension of the $\langle e, t\rangle$-property corresponding to the entity correlate of a property taken by the existential predicate as an argument. That is, the set of world-assignment function pairs that constitute the CCP associated with the sentence *there is a dog* assigns a value to the token-level discourse referent introduced by this sentence to an individual in the extension of the property DOG.

Taking into account the numerous parallelisms between *have*-sentences and *there be*, one way to go for an analysis of *have* would be to analyze its presentational argument as a higher-level entity, and to carry over the notion of presentational Context Change Potential to *have*-sentences.

There are, however, two differences between *have* and *there be* that need to be considered. The first of these differences has to do with the valency of the predicate. On McNally's analysis, *there be* is an intransitive predicate, which takes a higher-level entity as its argument.[5] By contrast, *have* is a transitive predicate. It will not suffice to posit that, as a result of uttering a *have*-sentence, a token-level discourse referent realizing the higher-level argument is introduced into the discourse. That is, to capture the effect in discourse of *Mary has many friends*, it is not enough to have (i) a relation between Mary and a higher-level entity **many friends**, and (ii) a token-level entity realizing this higher-level

[5]One might of course break down *there be* into *be* plus a dummy subject *there*. However, what results in this case is a copular structure, and not a transitive verb like *have*; the pivot has to be treated more like a predicate than an object NP.

entity, disconnected from Mary. The token-level argument needs to be connected to the sentence subject as well. As the literature on existential-*have* has striven to capture, this sentence is not about *friends* in general, but about *friends of Mary*.

The second difference has to do with context-dependency. McNally claims that *there be* corresponds to the one-place predicate **instantiate**, with no kind of context-dependency. *Have* is different in that respect: the relation it eventually expresses depends entirely on factors external to the predicate itself.

In the following section I will illustrate the analysis of presentational-*have* sentences. I will start with sortal NPs. Then I will move on to the prototypical cases of existential-*have*: sentences with an indefinite relational NP in object position. We will see that both cases share many similarities, but the exact mechanisms whereby the relation holding between subject and object is determined differ depending on the relationality of the object NP.

4.3.2. Presentational-*have*

Recall that presentational-*have* sentences are characterized by the following features: (i) their object is discourse new; (ii) context does not provide a value for the unspecified relation introduced by *have*; and (iii) the kind that the NPs in the relation instantiate is crucial for determining the relation *have* will convey.

Point (iii) applies slightly differently depending on the relationality of the object NP: if the NP is headed by a sortal noun, both the kind that the object instantiates and the kind that the subject instantiates are important. World-knowledge will, in such cases, tell us how the two kinds are prototypically related. If, by contrast, the noun is relational, it will carry an entailed relation. In these cases the kind the subject instantiates in discourse is not crucial in determining the relation: it only has to comply with the requirements that the relation entailed by the object nominal imposes on it. Let us see the two cases in turn.

4.3.2.1. *Have* with sortal NPs

Sentence (26) is a simple example of a *have*-sentence with a sortal NP as an object. Let us see how such a sentence enters the discourse, how the empty relation introduced by *have* gets an interpretation, and how the sentence contributes to take the discourse further.

(26) John has two dogs

(26) requires that an individual corresponding to John be part of the context. This is not, however, the only requirement on this context. We also need to know what kind of individual John is taken to instantiate in the discourse: are we talking about John as a regular, adult individual (which means that we talking about a **default human-dog**

relation, entailing that the dog is treated like a pet dog)? Are we talking about him as hunter, a blind person, a security guard, or any other sort of entity that might imply a relation with dogs different from **default human-dog**? I will assume that we are talking about John as a realization of the kind **default human**$_k$, therefore one that has a **default human-dog** relation with dogs. In the previous section I have shown how this information will be represented. (27) will be the context where (26) is uttered and against which it has to be interpreted:

(27)

$x_o\ x_k$
John(x_o)
default human(x_k)
$R(x_k)(x_o)$

In presentational-*have* sentences with sortal nouns, the kind that is realized by the referent of the object NP is also important to determine the relation. In (26), this kind will be **dog**$_k$. Note that if the sentence was *John has two Saint-Bernards*, the relevant piece of information to give a value to the relation introduced by *have* would be the fact that Saint-Bernards are realizations of **dog**$_k$.[6] This information will become part of the DRS *K* corresponding to (26), which will be interpreted against the context (27).

(28)

$x_o\ x_k$
John(x_o)
default human(x_k)
$R(x_k)(x_o)$

K_i

$Y_o\ y_k\ s$
dog $*\ (Y_o)$
$\lvert(Y_o)\rvert = 2$
dog$_k(y_k)$
$R * (y_k)(Y_o)$
Arg$_1(x_o)(s)$ **Arg**$_2(Y_o)(s)$

K

At this point we can merge the DRS *K* with the context K_i. This is the step where the relation *s* contributed by *have*, which so far is only defined by the fact that it relates the discourse referents x_o and y_o, finally gets a value. Since in this context the subject realizes **default human**$_k$, we need to retrieve the information from our world knowledge that entities realizing this kind may be in a particular relation with realizations of the kind **dog**$_k$. I have (transparently) called this relation **default person-dog**. I have formalized

[6]That would be the most general case, but of course one can imagine contexts (e.g. in a conversation between people who love dogs and are aware of the differences between the kind of care different breeds of dog require) in which the fact that a dog is a Saint-Bernard and not, say, a Poodle, might be relevant. In such cases it will not be enough to understand that the Saint-Bernard is a sub-kind of **dog**$_k$, but rather we will need to factor in the fact that **Saint-Bernard**$_k$ is a sub-kind of **dog**$_k$ which is different from, say, the sub-kind **poodle**$_k$. Instead of a general **default human-dog** relation, we will then have something like a **default human-Saint Bernard** relation, different than e.g. a **default human-Poodle** relation. In contrast to the **default human-dog** relation, which we can assume is part of every person's world knowledge, the differences concerning the entailments that these more specific relations give to their arguments should not be assumed by default as general knowledge.

this as (29), which I assume to be part of our world-knowledge.

(29) $\forall x_o \forall w.R_w(\textbf{default human}_k)(x_o) \rightarrow \Diamond \exists y_o \exists s[\textbf{default human-dog}_w(s) \wedge \textbf{Arg}_{1w}(x_o)(s) \wedge \textbf{Arg}_{2w}(y_o)(s)]$

This relation imposes a series of entailments on its arguments, such as that $\textbf{Arg}_1$ takes care of $\textbf{Arg}_2$, that $\textbf{Arg}_2$ lives in $\textbf{Arg}_1$'s home, etc. It is when we merge K_o with K that the value of the *s* relation is specified according to this information.

(30)

$x_o\ x_k$
$\textbf{John}(x_o)$
$\textbf{default human}(x_k)$
$R(x_k)(x_o)$

K_i

$\uplus$

$Y_o\ y_k\ s$
$\textbf{dog} * (Y_o)$
$\lvert(Y_o)\rvert = 2$
$\textbf{dog}_k(y_k)$
$R * (y_k)(Y_o)$
$\textbf{Arg}_1(x_o)(s)$
$\textbf{Arg}_2(Y_o)(s)$

K

=

$x_o\ Y_o\ x_k\ y_k\ s$
John
$\textbf{default human}(x_k)$
$R_{ko}(x_k)(x_o)$
$\textbf{dog} * (Y_o)$
$\lvert(Y_o)\rvert = 2$
$\textbf{dog}_k(y_k)$
$R * (y_k)(Y_o)$
$\textbf{default human-dog}(s)$
$\textbf{Arg}_1(x_o)(s) \quad \textbf{Arg}_2(Y_o)(s)$

K_o

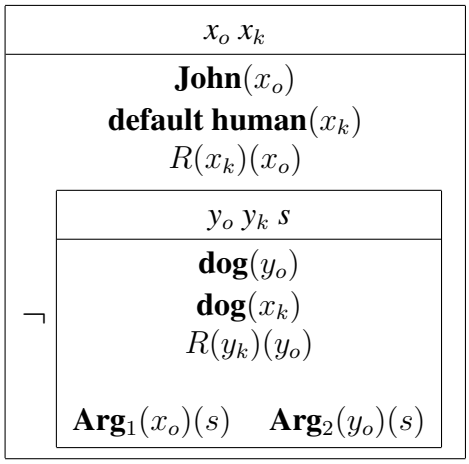
K_o thus captures how the context should be updated after adding (26) to it: a new (plural) discourse referent Y_o corresponding to the NP *two dogs* is introduced, as an instantiation of the kind $\textbf{dog}_k$,[7] connected to the discourse referent corresponding to John by the **default human-dog** relation.

Let us consider the case where a *have*-sentence is negated. These cases are not problematic for this approach. A sentence like (31) denies the existence of any relation between John and an individual instantiating the kind $\textbf{dog}_k$. The relation introduced by *have* does not, in these cases, make it to the main DRS. John, as a default human, does not have any relation whatsoever with a realization of the kind $\textbf{dog}_k$ (although he may be in such a relation as a realization of some other kind).

(31) John does not have a dog

[7]Note the *R** in the representations of (28) and (30), which makes sure that all entities in the set Y_o are realizations of the relevant kind.

(32)

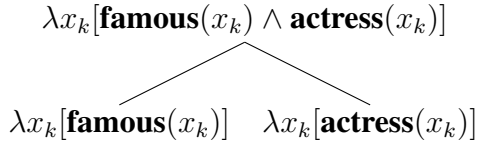


In this subsection I have shown how a presentational reading of *have* arises with first mention sortal nouns. The account requires using token- and kind-level discourse referents –the two sorts of entities that are, in general, standardly assumed in formal semantics. Let us now contrast it with another possible approach based on McNally's analysis of existential sentences, which uses a different sort of entities: entity correlates of properties.

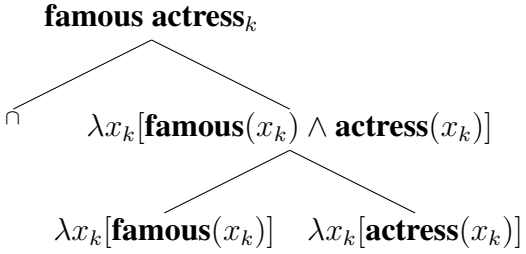
4.3.2.2. Comparison with a generalized-higher-level entities approach

I have mentioned above the possibility of adapting an analysis à la McNally (1992, 2009) for *there be* sentences to *have* sentences. This type of approach is undertaken in Bassaganyas-Bars (to appear). In this latter work, higher-level arguments are not modeled as entity correlates of properties, but rather as a sort called 'concepts' (adapted from Krifka (1995)). A concept-level entity is constructed in the following way. I will use the NP *two famous actresses* to illustrate. Following so-called 'layered' approaches to the semantics of noun phrases (Zamparelli (2000), Espinal (2010)), I will take common nouns and (some) adjectives to denote predicates of kinds (which correspond to singletons). Composition between nouns and modifiers proceeds by Predicate Modification.

(33)



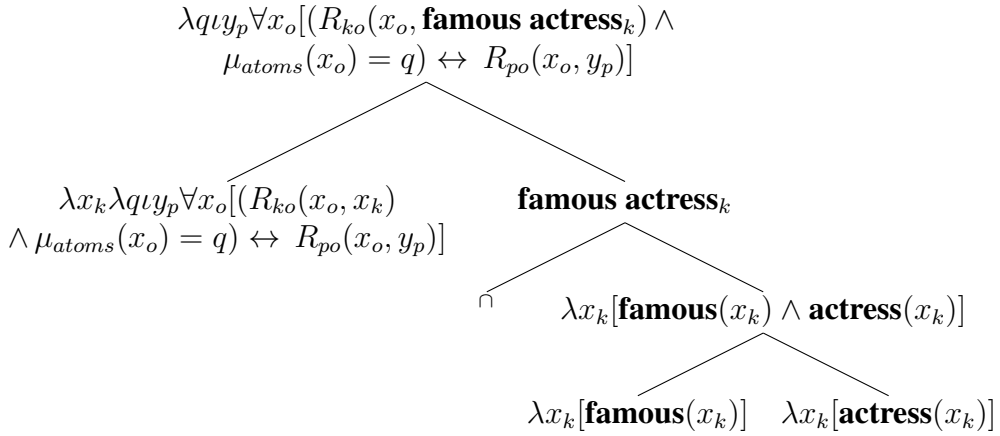
We now have the set comprised by the kind-level entity 'famous actress'. Müller-Reichau (2011) notes that this set and the entity it contains are 'informationally equivalent', and proposes a variant of the $^\cap$ operator (Chierchia (1984, 1998)) that turns the singleton into the single entity it contains:



At this point, Bassaganyas-Bars (to appear) assumes that a covert functional head, named *Class* (following Borer (2005)), applies. This head takes kind-denoting entities and turns them into a function from quantity/degree words into concepts. The sub-index *p* (which evokes the similarity between concepts and entity correlates of properties) distinguishes concept-level variables; *q* is a variable over quantity/degree-denoting elements; R_{ko} is the realization relation between kinds and objects (equivalent to the familiar *R* I have been using so far); R_{po} is a realization relation between concepts and token-level entities.

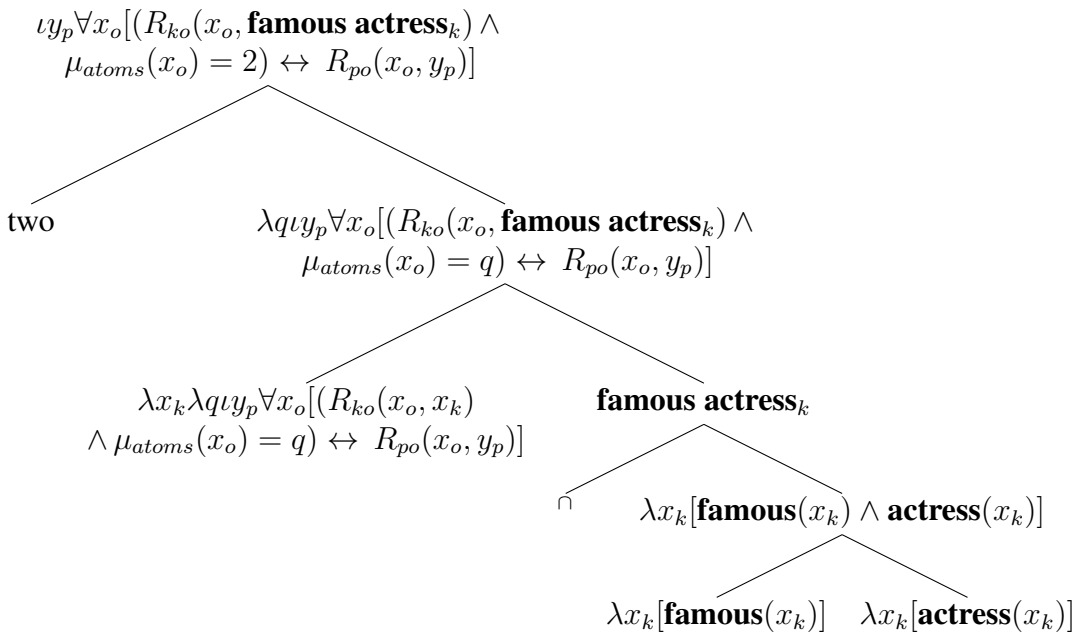
(34) $[\![Class]\!] : \lambda x_k \lambda q \iota y_p \forall x_o [(R_{ko}(x_o, x_k) \wedge \mu_{atoms}(x_o) = q) \leftrightarrow R_{po}(x_o, y_p)]$

If we compose *Class* with the translation of *famous actress*, we get the logical representation in (35).

(35)


Then we add the quantity word (here, *two*), which is taken to be the specification of the value of a measure function μ which is specified to count atoms (adapting Scontras (2017)):

(36)

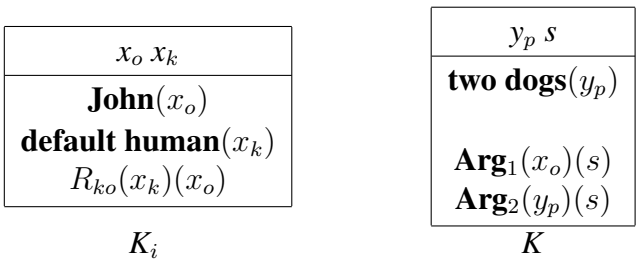


Let us analyze what we have gotten. We have the (unique) concept-level entity that any non-atomic entity comprising two famous actresses will be a realization of (see Bassaganyas-Bars (to appear) for details). For clarity purposes, the top-most node in (36) will be represented as **two famous actresses**$_p$. Let us then apply the same idea to sentence (26) above, repeated here as (37).

(37) John has two dogs

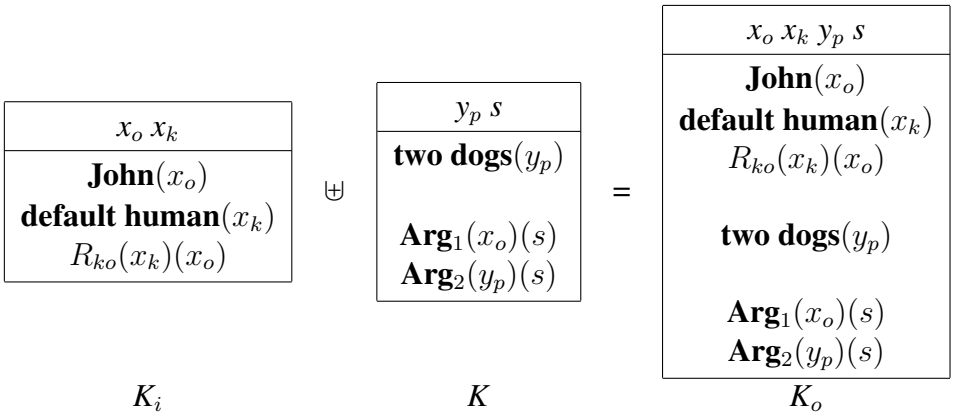
I keep assuming a context K_i containing an entity corresponding to John which is interpreted as a realization of the kind **default human**$_k$.

(38)



The differences between this line of analysis and the one not using concept-level entities across the board show up in (38). The object of (37) will be analyzed as the concept-level entity **two dogs**$_p$. *Have* then establishes a relation between this concept-level entity and the token-level subject. If we simply merge K with the context K_i, the resulting updated context will not capture the contribution made by (37) into the discourse.

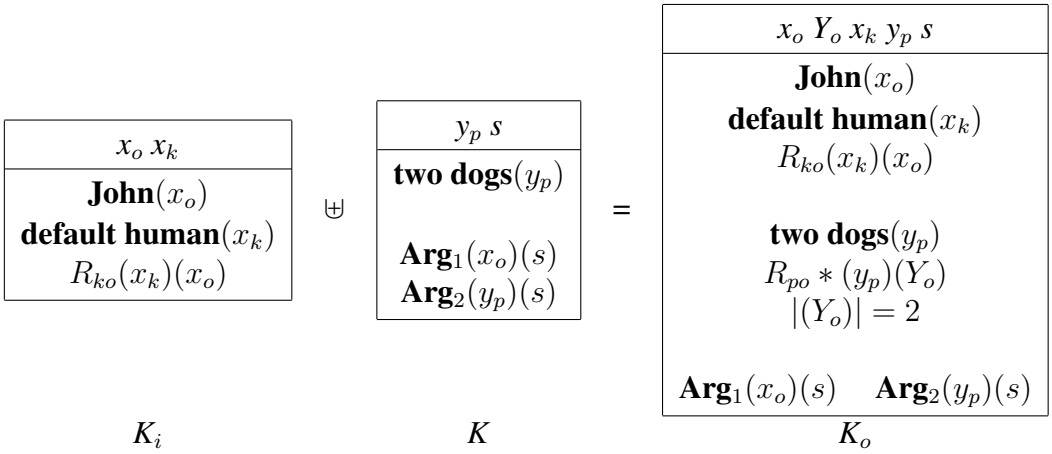
(39)



K_o will be true whenever John is in an unspecified relation with the concept-level entity **two dogs**$_p$. This is insufficient in two ways: first, it fails to predict that as a result of uttering (37), a new token-level entity enters the context. If the discourse felicitously continues with an utterance such as *they are nice*, K_o does not provide any suitable antecedent for *they* –the concept-level y_p is not a viable option. Second, it tells us nothing about the nature of the relation that *have* introduces into the discourse.

Recall that, on McNally's analysis, the Context Change Potential associated with *there be* sentences is special in that not only the higher-level entity, but also a token-level one, enters the discourse. The first problem mentioned above can be solved by adopting a similar stipulation for *have*-sentences. In DRT terms, the CCP associated with *have*-sentences will be a function from an information state $[\![\mathrm{K}_i]\!]^x_M$ to an information state $[\![\mathrm{K}_o]\!]^x_M$ such that all the f in the $< w, f >$ pairs in $[\![\mathrm{K}_o]\!]^x_M$ assign not only a concept-level discourse referent to the entity **two dogs**$_p$, but also a token-level discourse referent to an entity which is connected to **two dogs**$_p$ by a realization relation between concepts and objects, which I have represented as R_{po}. The result of adding K into context K_i should then be the following.

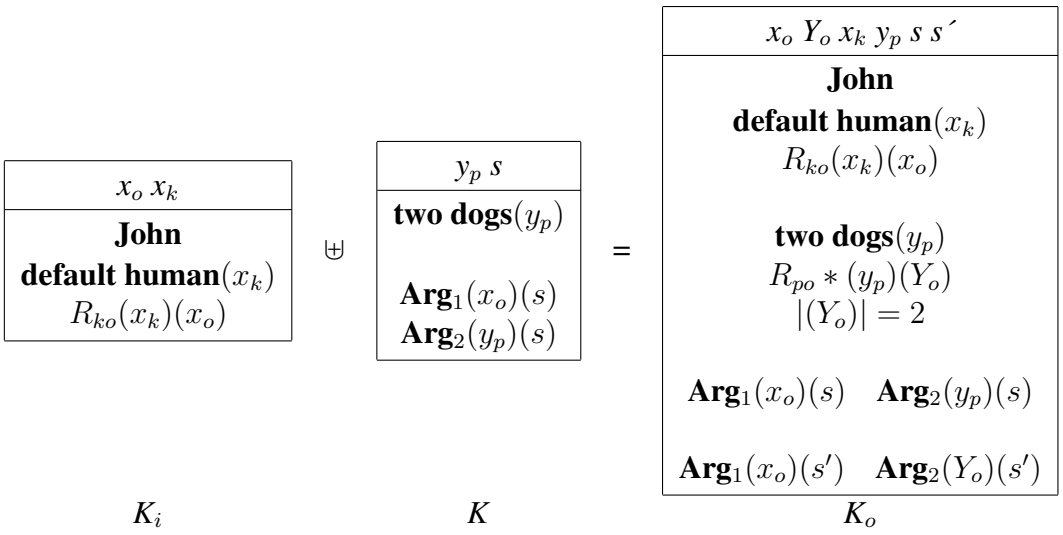
(40)



A plural token-level individual (Y_o) has entered the discourse; it will be a set of two dogs. We have now a discourse antecedent for a subsequent pronoun *they* referring to the two dogs. Nevertheless, this is still not satisfactory. This new token-level discourse referent is not connected in any way to John. The *have*-sentence has introduced a token-level entity

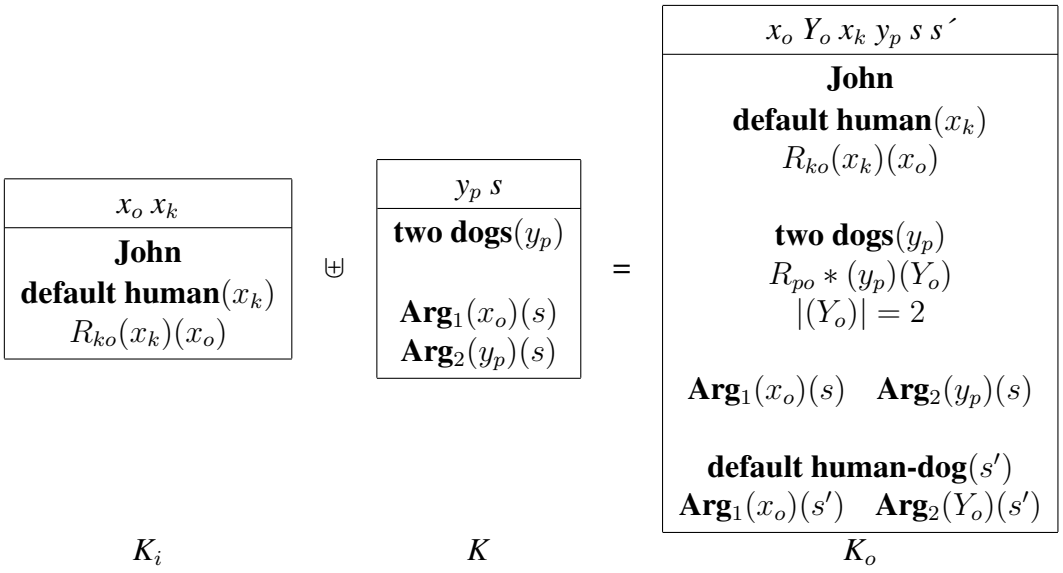
into the discourse, but this entity is disconnected from the subject: there is no relation between John and the token-level dogs. To solve this problem, the CCP associated with *have* has to do one more thing: apart from the relation connecting the subject to the concept (*s*), it has to introduce an extra relation (s' below) between the subject and the newly introduced token-level entity.

(41)



We still need to specify the nature of the relation between John and the token-level entity resulting from realizing the concept **two dogs**$_p$. Here is when we take into account the information on the kind John is realizing in discourse: it is **default human**$_k$. Now we need the information on the kind the object instantiates. Concept formation involved the functional head *Class* represented in (34) above. This classifier takes kind-level entities as arguments. Therefore, concepts contain the information of what kinds their token-level instantiations are going to be realizations of. Let us assume that this is enough to license the inference that the relation expressed by the sentence is a relation between **default human**$_k$ and the kind **dog**$_k$, the latter being involved in the formation of the concept **two dogs**$_p$. We thus finally get to (42).

(42)



K_o in (42) contains the information that there is there is a relation (s) between John and the concept **two dogs**$_p$; that a token-level realization of this concept (Y_o) is introduced into the discourse; and that this token-level entity is in a relation with John (s'), different from s, which gets the value **default human-dog**. (42) adequately captures the discourse contribution of (37), but to get there we need to assume the introduction of a higher-level discourse entity, a token-level one, and two relations, each one connecting one of these entities to the sentence subject.

The analysis followed in the previous section, which does not posit higher-level entities across the board, and therefore does not treat the NP *two dogs* as translating as a concept-level entity, covers the data as well and requires less stipulations. Nevertheless, a potential problem for an account which does not use higher-level entities are *have*-sentences with kind-level objects, which in the Chierchia-McNally approach are analyzed as higher-level entities. Will we need to posit something like a presentational Context Change Potential in such cases? We will see in section 4.3.4 that the same mechanisms that have been put forward in the literature to deal with kind-level arguments with non-kind-level predicates in general will suffice to explain this type of *have*-sentences. Before that, however, let us now turn to presentational *have*-sentences with relational NPs: the cases that have been traditionally called existential-*have*.

4.3.2.3. *Have* with relational NPs (existential-*have*)

The analysis developed in chapters 2 and 3 posits that the crucial factor in the interpretation of presentational-*have* sentences with relational NPs has to do with a restriction on the way these nouns can be used in discourse. It therefore does not attribute the special status of these nouns, and the particular interpretive restrictions they are subject to, to semantic reasons, but rather to pragmatic ones. I treat these nouns as one-place predicates which entail a relation. This entailment is represented as a meaning postulate. The noun

daughter, for instance, is associated with the meaning postulate (43).

(43) $\forall x_o \forall w.R_w(\textbf{daughter}_k)(x_o) \rightarrow \exists y_o \exists s[\textbf{parent-daughter}_w(s) \wedge \textbf{Arg}_{1w}(y_o)(s) \wedge \textbf{Arg}_{2w}(x_o)(s)]$

I have also proposed (extending Grimm and McNally's (2013: 128) treatment of deverbal nouns) the following discourse condition governing the use of relational nouns:

(44) **Non-derived Relational Noun Instantiation Condition**: The introduction of a token discourse referent for a relation-entailing individual *x* needs to be anchored to the relation it entails and to the discourse referent corresponding to the other participant in this relation.

On this view, *have* is a privileged vehicle to introduce these token discourse referents for relation-entailing nominals into the discourse. What *have* does is precisely anchor the nominal to the participant it entails. A crucial aspect of the semantics of *have* is that it needs to get a value for the relation it introduces into the context. I have shown above that, with sortal nouns, this value comes from conceptual information about the subject and the object (i.e. what kinds they instantiate) and world-knowledge inferences; with relational nouns, the relation is the one entailed by the noun. Any of the existing accounts based on relational nouns as translating into 2-place relations adequately predicts that (45) is not ambiguous: the only relation this sentence can express is **daughter-of**, which comes from the translation of the noun *daughter*.

(45) Mary has a daughter

On the account defended here, this prediction is made in a different way. The meaning postulate in (43) entails a **parent-daughter** relation. By virtue of the discourse condition in (44), if the NP *a daughter* is discourse new, (45) necessarily expresses this relation, with Mary playing the role of the parent. By contrast, if *a daughter* is *not* discourse new, (44) implies that the referent of the NP has been previously introduced into the discourse together with its 'parent' entity. If that were the case, a contextualized reading of (45) would result (and the NP would be interpreted as a partitive, i.e. as *one of the daughters*), and this would exclude **parent-daughter** as a possible value for the *have*-relation.

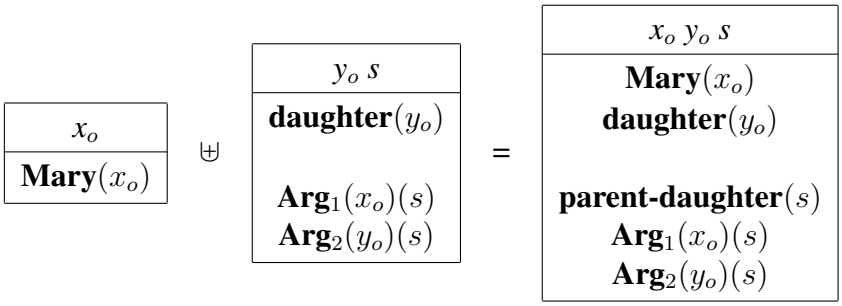
This approach reduces the difference between existential-*have* and *have*-sentences with sortal nouns to a difference in how the relation is determined. It does not need to posit a difference in logical type between nouns. Therefore, the steps we have gone through in the previous subsection for *have* with sortal nouns will carry over here. There is, however, one small difference worth commenting on.

With sortal nouns, the information on the kind the subject is taken to instantiate in the discourse played a crucial role in determining the relation eventually expressed by the sentence. This will not happen with relational nouns. Meaning postulates like (43) entail a series of things of their external argument ($\textbf{Arg}_1$), one of them being that it has to be a realization of the kind $\textbf{parent}_k$. If we are talking about John as a blind person, and

we say *he has a dog*, the fact that he is blind, and that this information is salient at this point, affects how we interpret his relation with his dog; however, if in the very same context we utter *he has a daughter*, him being blind does not have any influence on the relation expressed by *have*, as long as John can be conceived of as a realization of the kind **parent**$_k$. In other words, if John has a daughter, all we need is that he is a realization of **parent**$_k$, regardless of any other role it might be playing in the previous discourse.

Adding (45) into the discourse will thus update the context in the following way; note that in K_i I do not represent what kind Mary is taken to instantiate, since this will have no effect on the interpretation of the sentence.

(46)



The definiteness effect associated with *have* with relational nouns gets a straightforward explanation. Let me restate this explanation. Recall that the reasons for positing this effect is the apparent deviance of (47).

(47) John has the daughter

On the present view this is explained by the discourse condition associated with relational nouns, as I have already shown in this section. This condition implies that, if the NP *the daughter* is felicitously used in the context where (47) is uttered, it must have been introduced into the previous discourse together with one or both of its parents. If we give an anaphoric interpretation to *the*, then, it is impossible to interpret this sentence as expressing a **parent-daughter** relation.

In this section I have shown how presentational-*have* functions as a vehicle to introduce entities into the context connected to the sentence subject. The nature of this connection depends on the arguments of the relation. There are, however, cases where context already supplies the relation that holds between the two arguments of *have*. I have presented this use of *have* in section 2.4.4. In such cases, the arguments are liberated from the task of having to determine the relation. The conceptual interpretation of these arguments (modeled here as the kind one or both instantiate) is immaterial to the relation –as long as they comply with the requirements this relation imposes on its arguments. What matters is the descriptive content of the NPs, i.e. that they adequately point at the relevant discourse entities they are meant to identify. Furthermore, in such cases nothing hinges on the discourse status of the object: unlike in presentational-*have*, we are not introducing into the discourse an individual defined by being a member of a certain relation. We are just circumstantially relating entities whose existence is totally independent from this relation.

This is what I have been calling contextualized-*have*.

4.3.3. Contextualized *have*

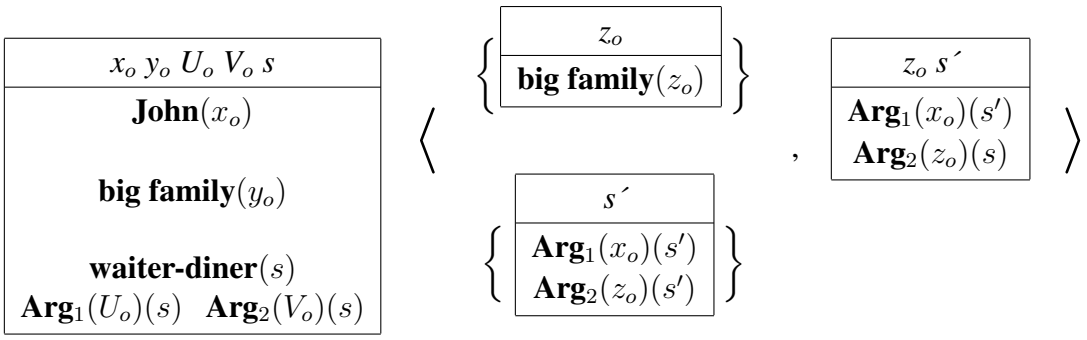
In chapter 2 I set up a context in which the conversational topic was the way the tables in a restaurant were assigned to different waiters during a service. This discourse topic amounts to determining between which entities the **waiter-diner** relation holds. This is a relation that entails that $\mathbf{Arg}_1$ will ask $\mathbf{Arg}_2$ about the dishes they want to consume and then will bring them to the table without eating them, that $\mathbf{Arg}_2$ will eat the dishes and then pay for them, etc. In such a context, and assuming John is one of the waiters, (48) would be a very natural sentence.

(48) John has the big family

In this case, *have* does not need the help of its arguments to determine the relation, and the connection between the two arguments is purely circumstantial. The object NP in (48) obviously refers to an entity that is already part of the context. Therefore, unlike in presentational-*have* cases, the description *big family* applies to this entity irrespective of its relation with John. *John has the noisy bunch* would be equivalent to (48) if the big family happened to also be the only noisy group in the restaurant.

Let us go, step by step, through the process whereby a sentence like (48) is added into the discourse. This sentence carries two separate presuppositions (aside from the automatically accommodated one related to the proper name). The first is connected to the definite article in the object: the context must contain an antecedent for the discourse referent introduced by this NP. The second is that the previous context must contain a suitable relation the value of which can be absorbed by *have*, i.e. the relation introduced by *have*, lacking any meaning postulate or world-knowledge inference coming from the arguments, needs an antecedent to get a value. (49) is thus the preliminary representation of (48) before presupposition resolution.

(49)

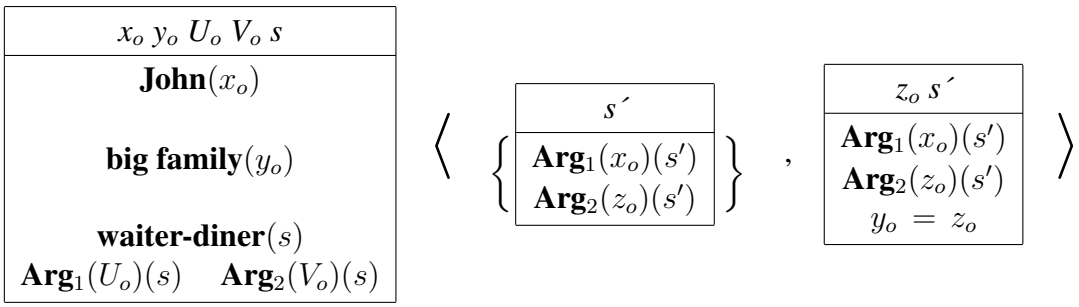


context *preliminary DRS*

The context in (48) contains two discourse referents, John and a big family, and the **waiter-diner** relation. This relation holds between two plural discourse referents of unspecified cardinality (if John was the only potential value for $\mathbf{Arg}_1$ of this relation, (48)

would be a rather uninformative statement). This captures the idea that if the discourse topic is between what individuals this relation holds, there is a previous assumption that some individuals stand in this relation. Let us first resolve the presupposition associated with the definite article in *the big family*, leaving us only with the presupposition connected to the state introduced by *have*.

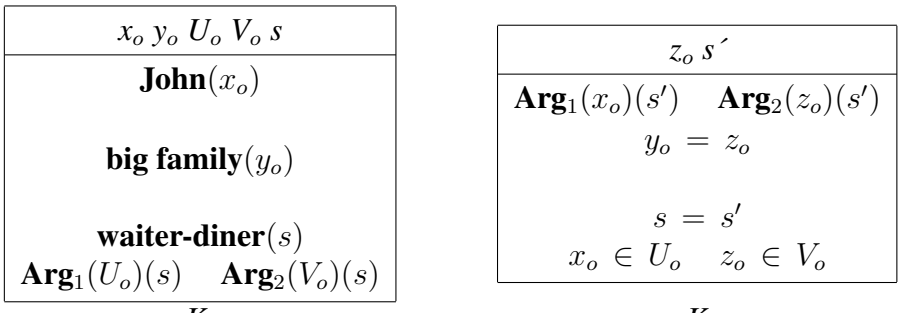
(50)



context *preliminary DRS*

Now we need to identify the relation corresponding to the discourse referent s' with an available antecedent, which in this case will be s. In such cases, the arguments of both relations are going to be related in the following way: the values of **Arg**$_1$ and **Arg**$_2$ of s' will be understood as members of the plural discourse referents which are the values of the corresponding arguments of s. This captures the fact that the relation **waiter-diner** is argued to hold between John and the big family, and also, potentially, between many other entities in the same context (for instance, between Mary, who is another waitress, and an old couple sitting next to a window).

(51)



K_i K

At this point, it becomes evident that all the content of (48) is presuppositional, in the sense that it is dependent on antecedents in the previous discourse. We can now merge K with K_i and update the discourse.

$x_o\ y_o\ U_o\ V_o\ s$
John(x_o)
big family(y_o)
waiter-diner(s)
Arg$_1(U_o)(s)$ **Arg**$_2(V_o)(s)$

K_i

$\uplus$

$z_o\ s'$
Arg$_1(x_o)(s')$ **Arg**$_2(z_o)(s')$
$y_o = z_o$
$s = s'$
$x_o \in U_o \quad z_o \in V_o$

K

=

(52)

$x_o\ y_o\ z_o\ U_o\ V_o\ s\ s'$
John(x_o)
big family(y_o)
$y_o = z_o$
waiter-diner(s)
Arg$_1(U_o)(s)$ **Arg**$_2(V_o)(s)$
$s = s' \quad x_o \in U_o \quad z_o \in V_o$

K_o

I have so far shown the analysis of presentational and contextualized uses of *have*. There is, in addition to those, a class of sentences that needs specific attention. It is the class that has emerged in section 3.4: sentences with definite or quantificational objects that, nevertheless, are interpreted presentationally. I argued in that section that their object NPs are not interpreted as descriptions of non-token-level entities, but rather as kinds or individual concepts. *Have*-sentences with these types of objects get a presentational reading because as a result of uttering these sentences, token-level discourse entities are added into the discourse. I will focus in the next section on sentences with kind-level objects. They pose a challenge to the current approach in two respects: first, we need to clarify how the relation between subject and object they express is determined; second, we need to explain the fact that they do not have to get contextualized interpretations when they are definite. That is, we need to know how exactly they escape the definiteness effect.

4.3.4. *Have*-sentences with kind-level objects

Sentences (53a) and (53b) are examples of *have*-sentences with kind-denoting object NPs.

(53) a. Mary has three kinds of friends
b. Mary has three sorts of dogs

The natural interpretation of the relation introduced by *have* in (53a) is the one entailed by

the relational noun *friend*, i.e. **friendship**. (53a) means that, among the individuals that can be considered friends of Mary, one can find realizations of three particular sub-kinds of **friend**$_k$. Similarly, (53b) asserts that Mary is related to a group of dogs, each of which is a realization of one of three sub-kinds of **dog**$_k$. The noun *dog* is not relational, and the relation holding between Mary and these dogs will depend, as generally with sortal nouns, on the kind she instantiates in discourse: **default human**$_k$, **hunter**$_k$, **pet shop owner**$_k$, etc.

The object NPs of (53a) and (53b) are indefinite, and I assume that they are discourse new. The way we determine the relation introduced by *have* is thus the same as in presentational-*have* sentences whose objects are not kind-denoting. However, in those cases the way the relation was determined was connected to the status of the noun heading the object. Here the nouns heading the object NP are *kind* and *sort*, respectively. The nominals relevant for determining the relation are their complements. How does *have* then get a value for its relation?

That these sentences are special is made clear by the fact that overtly kind-denoting objects of *have* can be definite without having to get a contextualized reading, as shown in Chapter 3. (54a) and (54b) still express a **friendship** relation or whatever relation a dog has with the kind instantiated by Mary.

(54) a. Mary has these three kinds of friends
b. Mary has the three sorts of dogs

I will deal with indefinite and definite kind-denoting objects of *have* in turn. I will argue that what allows these sentences to get a presentational reading follows from the way kind-level arguments to non-kind-level predicates are interpreted generally, without having to posit any special interpretive condition associated with *have*.

4.3.4.1. *Have* with indefinite kind-level objects

So how does *have* in (53a) and (53b) get an interpretation? How do we interpret these sentences as asserting the same relations that a token-level argument would be able to convey? I will use (53a), repeated here as (55), to illustrate how this type of sentences are interpreted in discourse.

(55) Mary has three kinds of friends

(55) is an instance of the presentational use of *have*. As a result of uttering it, three new entities enter the discourse, but in this case, these entities will not be token-level. They will be kind-level. Three *kinds* of friends (say **childhood friends**$_k$, **university friends**$_k$ and **work friends**$_k$) will enter the discourse in connection to John. However, the truth of (55) does not rest on the fact that John is connected to abstract, kind-level individuals. John has to be ultimately connected to concrete, token-level individuals (who must be understood as realizations of the kinds in question).

The problem we are facing here is linked to the issue of the interpretation of kind-level NPs when they are arguments of non-kind-level predicates in episodic contexts, discussed since at least Carlson (1977). Carlson famously proposed that in such sentences it is the predicate that introduces existential quantification over instances of the kind (z_i stands for the context-dependent *that kind of apple* in (56b)).

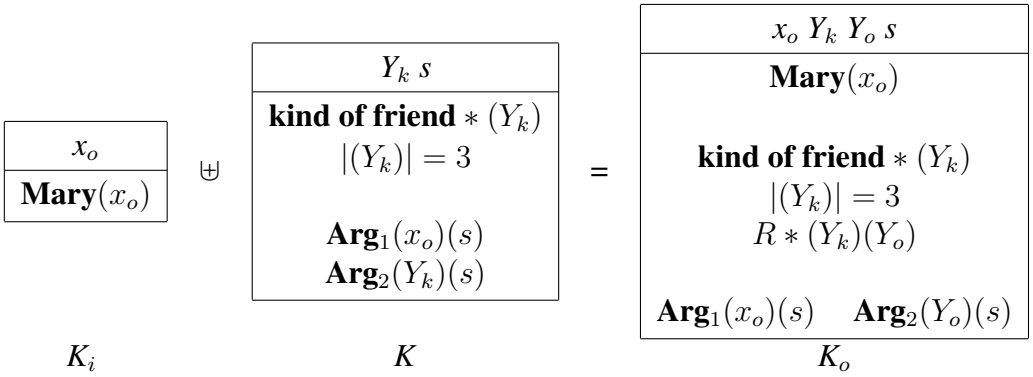
(56) a. John ate that kind of apple
b. $\exists x.R(x, z_i) \wedge \mathbf{eat}(\mathbf{j}, x)$

Carlson's insight has been reformulated in many ways in the last four decades. As an example, Chierchia (1998) updated Carlson's proposal by suggesting a rule called Derived Kind Predication that applies to the predicate in these cases ($^\cup$ is here an operator turning a kind –an individual– into a property –a set of individuals that are realizations of the kind):

(57) *Derived Kind Predication*:
If P applies to objects and k denotes a kind, then
$P(k) = \exists x[^\cup k(x) \wedge P(x)]$

Whatever analysis these facts are ultimately given, what is crucial is that for non-kind-level sentences with kind-denoting arguments in episodic contexts to be true, the predicate must apply to realizations of the kind, and not to the kind itself. I will remain agnostic on how this fact should be derived. I will simply assume that in such sentences an *R* relation holds between the kind-level argument of *have* and another, newly introduced, token-level entity, and that it will be this token-level entity that will be the argument to the relation introduced by *have*. The token-level entity will be introduced as part of the merge operation between K_i and *K*. (55) then corresponds to (58):

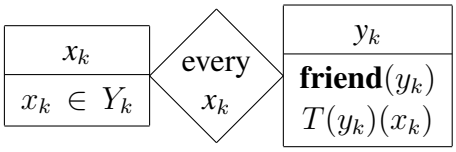
(58)



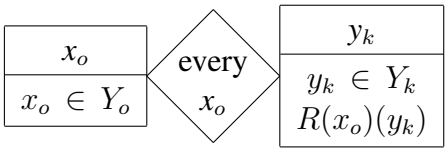
A note on the use of the asterisks in *K* and K_o in (58) is required at this point. In section 4.2.5 I have mentioned that the asterisk used in the treatment of plurals is equivalent to a DRS condition amounting to a universally quantified statement: a condition like **car***(Y_o) means that the predicate **car** applies individually to all the members of the set corresponding to the plural discourse referent Y_o. I assume that the condition **kind of friend***(Y_k) in (58) is equivalent to the DRS condition in (59) (where *T* stands for the sub-kind relation, as in Krifka et al. (1995)), whereas the condition $R * (Y_k)(Y_o)$ is equivalent

to (60):[8]

(59)

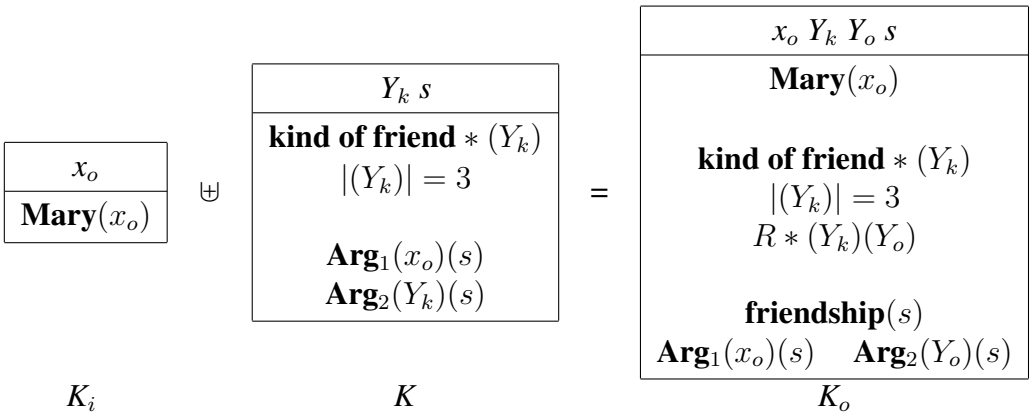


(60)



As a result of having updated the context with *K*, a plural, token-level discourse referent has been introduced (Y_o). This set comprises three (singular) discourse referents which are realizations of sub-kinds of **friend**$_k$. This implies that these discourse referents are introduced into the discourse insofar as they are true of the description *friend*. *Friend* is a relational noun, so the discourse condition associated with these nominals will step in: they need to be introduced together with the individuals they are in a relation with. At this point, the same mechanism as in presentational-*have* cases applies. The relation entailed by *friend* is **friendship**, and the other argument in this relation will obviously be the sentence subject. For every token-level friend introduced into the discourse by (58), Mary is the other argument in the **friendship** relation entailed by the nominal. We can thus set the value of *s´* to **friendship**, and we get the desired interpretation for the sentence in (61).

(61)



If the indefinite kind-denoting NP contains a sortal noun instead of a relational one, the value of *have* will also be determined in the way familiar from presentational-*have* sentences. Take (53b), repeated here as (62):

(62) Mary has three sorts of dogs

[8] A more principled way to derive these facts is a matter for future research. Besides, one should factor out the possibility of having sets with the same kind repeated more than once, or sets of kinds which are connected by the sub-kind relation (on the latter, see the early discussion in Carlson (1977)). I will for now put aside these issues, which are tangential to the main discussion in this section.

This *have*-sentence will result in the introduction of token-level dogs into the discourse connected to Mary, so the relation holding between Mary and the dogs will depend on the kind Mary is taken to instantiate and world-knowledge inferences, as I have already illustrated in the previous sections.

A crucial point raised by kind-level objects is that they are able to flout the definiteness effect. In the following section I will tackle these cases. We will see that definite kind-level objects can be reduced to the cases with indefinite kind-level objects that I have just gone through.

4.3.4.2. *Have* with definite kind-level objects

Imagine a conversation where the participants are discussing the kinds of friends one may come across in life. They have agreed that a lot of people have lifelong friends, friends from the university, and friends from work. In this context, one of the conversational partners might very well utter (63):

(63) I have the three kinds of friends

This sentence has a definite object. Recall that, with token-level objects, this had a very clear implication: the relation expressed by the sentence cannot be the one entailed by the object (e.g. **friendship**), but another, context-dependent one. However, it is easy to see that (63) and (55) do not contrast in that respect. Both sentences are able to express a **friendship** relation anchored to John. We have seen how this reading comes about when the kind-level NP is indefinite. What happens when it is definite?

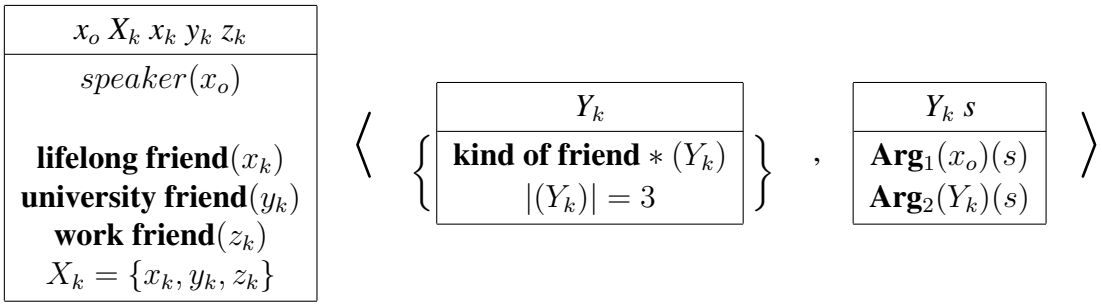
The context in which (63) is uttered needs to contain three kind-level entities, corresponding to the three kinds of friends under discussion. Following the view of plural discourse referents adopted here, this context will also include the plural discourse referent that they form.

(64)

$x_o\ X_k\ x_k\ y_k\ z_k$
$speaker(x_o)$
lifelong friend(x_k)
university friend(y_k)
work friend(z_k)
$X_k = \{x_k, y_k, z_k\}$

(63) is interpreted against this context. The only difference with a *have*-sentence with an indefinite kind-level object is that in this case there will be a presupposition that the object of (63) has an antecedent in the context. This is represented in (65):

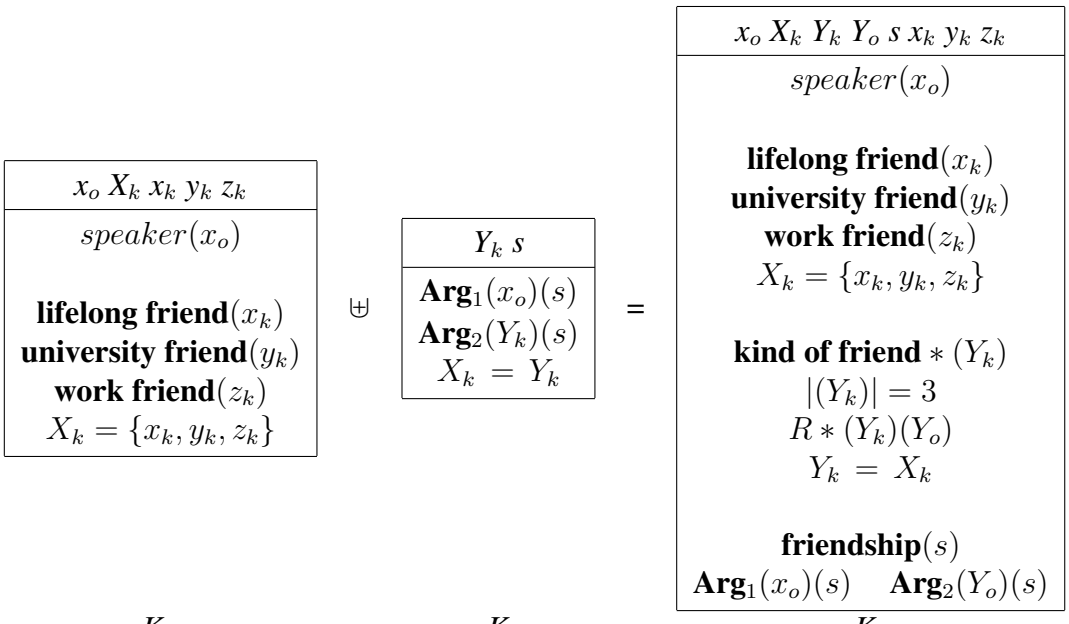
(65)



context *preliminary DRS*

There is an antecedent available for Y_k, namely X_k. The interpretation of the sentence can thus proceed. Note that the same procedure seen in the case of indefinite kind-level objects applies: a token-level plural entity realizing the three relevant kinds is introduced; as a result, token-level entities describable with the nominal *friends* enter the discourse and, due to the discourse principle governing the use of these nouns, each of these token-level entities is connected to the subject by the **friendship** relation. This final result is illustrated in (66):

(66)



K_i K K_o

We have thus achieved the desired results: K_o in (66) captures the fact that the speaker is connected by a **friendship** relation to the individuals making up a plural discourse referent (Y_o), each of which is a realization of one of three kinds (**lifelong friend**$_k$, **university friend**$_k$ and **work friend**$_k$) which were already present in the discourse prior to the utterance of (63). The possibility of having definite kind-level objects without triggering a contextualized-*have* reading is thus straightforwardly explained.

4.4. Summary

In this chapter I have developed a DRT-based account of the behavior of *have* in discourse. I have illustrated how presentational-*have* sentences are interpreted, following the approach outlined in Chapter 2 and Chapter 3. I have then provided an analysis of contextualized-*have* sentences. Finally, I have extended the account to sentences with kind-level objects. The explanation of the latter type of sentences has fallen out naturally from the assumptions previously made and the way kind-level arguments of non-kind-level predicates are interpreted, without requiring further stipulations.

The account that I have put forward differs in a number of ways from the traditional semantic accounts of *have*. It also makes a proposal that is not standard in formal semantics, namely that the *kinds* that the referent of an NP may be a realization of (irrespective of the descriptive content of this NP) can determine the interpretation of a predicate. At the same time, I have refrained from looking beyond the syntactically most simple cases of *have*-sentences, namely those with a simple, entity-denoting NP as their object. Is there any way this account can be extended to cover cases like (67) or those in (68) (from Sæbø (2009))?

(67) John and Mary are having fun

(68) a. The beetle had the engine in the rear
b. She has all four grandparents alive
c. Shrek has a donkey for a friend
d. She had her door locked
e. I had a gun pointing at me

In the next chapter I will briefly tackle this and some other open issues, including the relation between *have* and *be* and some uses of *have* available in other languages but not in present-day English.

Chapter 5

Further issues

5.1. Introduction

The focus of this dissertation has been the interpretation of *have*-sentences involving a simple, entity-denoting NP as an object. I have concentrated mainly on NPs that denote concrete entities. In the preceding chapters I have articulated a theory that explains how this subtype of *have*-sentences works. I have focused mainly on English *have*. I do not claim that the theory developed here can be directly extrapolated to other languages with a *have* verb. It is my belief, however, that the basic workings of *have* in at least a subset of languages with a *have* verb can be explained along similar lines to the ones put forward here.

There are, however, many other reasons why *have* has attracted so much attention beyond the class of sentences I have looked into in the preceding chapters. *Have*-verbs can often be used with a small clause-like structures instead of a simple NP as an object. This possibility allows *have* to adopt functions as a 'light verb'. This is a general tendency; each language with a *have* verb then uses it in somewhat different ways and for a slightly different range of functions. There is variation on the types of nominals that can be the object of *have* across languages; there are also differences regarding the more 'functional' roles *have* may adopt (verbal auxiliary, existential predicate, etc). The point, however, is that this variation takes place within some limits, and it might be reasonable to hypothesize that what causes the variation is not a difference in the semantics of *have* itself.

I do not have a fully articulated theory on how all these uses of *have* need to be analyzed. However, as I said from the very beginning, part of my general goal has been to develop a theory that can be at least potentially compatible with these extended uses of *have*. In this chapter I will outline how my theory could be augmented to cover some of these cases. The arguments provided here are necessarily going to be much more speculative than the rest of this dissertation. The main purpose of the following sections is to suggest potential lines of future research, more than to provide definitive answers to these issues. Before we move on, let me clarify that I will not have anything to say about the uses of

have as an auxiliary for compound tenses or as an existential predicate. Although I think that the present analysis can ultimately explain how these uses derive from the general semantics of *have*, they involve too many additional complications, so I will leave this part of the discussion for future research. See Fontana (2014, 2017) for an account of the development of the perfect which is compatible with the views that I defend here.

This chapter is organized as follows. First, I will deal with the uses of *have* in which it takes an object that contains eventuality-denoting material. Second, I will briefly comment on the complementarity between *have* and *be* that has been suggested mainly by the syntactic literature, according to which these two verbs are the realization of a single underlying element. Third, I will illustrate how this theory can be compatible with data from languages where *have* has a slightly different range of uses than it has in present day English. I will use data from Old Catalan and Old English.

5.2. *Have* with eventive complements

There are many uses of *have* in which its complement contains eventuality-denoting nouns, verbal forms, adjectives or prepositional phrases. These cases can be subdivided into two different classes of sentences. On the one hand, *have* can be used with non-derived eventuality-denoting nominals, such as *fun*, *party* or *shower*. On the other hand, *have* can be used with small-clause-like complements where the predicate can be a PP, an AP, or a non-finite verbal form. Let us deal with the two cases in turn.

5.2.1. *Have* with eventuality-denoting nouns as objects

English *have* can be used with nouns that denote eventualities (events or states) rather than entities, despite not being derived from any prototypical eventuality-denoting predicate (i.e. a verb or an adjective). One such example is *fun*. The noun *fun* seems to behave like a relational noun. It can be used without any argument in generic sentences, where the truth of the sentence does not depend on there being specific tokens of *fun* realized in a particular situation. That is, sentence (1) might be true in a situation where no-one is having any fun (see e.g. Grimm and McNally (2015)).

(1) Fun is an important part of life

Token-level realizations of *fun*, by contrast, need to be connected to an individual. The verb *have* is one of the ways to achieve that. Example (2) introduces into the discourse a token-level realization of the state *fun*, connected to Mary. It does not seem that the kind Mary is instantiating in this discourse has any effect on the meaning of (2). This sentence can only mean that Mary experienced fun, and not that she was related to fun in a context-dependent way. Following the analysis from the previous chapters, *fun* behaves like a truly relational noun.

(2) Mary had fun

We can hypothesize then that *fun* denotes a one-place predicate of eventualities with an associated meaning postulate. Its use in discourse is thus governed by the Non-derived Relational Noun Instantiation Condition (see Chapter 2 for details).

(3) a. $[\![\text{fun}]\!] : \lambda s.\mathbf{fun}(s)$
b. $\forall s_o \forall w[R_w(\mathbf{fun}_{k_w})(s_o) \rightarrow \exists y_o[\mathbf{Arg}_{1w}(y_o)(s_o)]]$

The entailments the predicate *fun* imposes on its implied argument is that it needs to be the experiencer of the state denoted by *fun*. This is why, as happens with relational nouns, if a sentence like (2) is introduced into the discourse, the only reading it has is the one where Mary is the experiencer of that state.

Other eventuality-denoting nouns denote dynamic events rather than states. This is the case of the nouns *party* or *shower*. There is a small difference between them. *Party* is always event-denoting. However, it seems to have a non-relational variant, which allows for sentences like (4a) and (4b). In that case, the denotation of *party* will be a simple predicate of events, with no associated meaning postulate, as represented in (5).

(4) a. There was a party in the lobby
b. A party took place yesterday in the hotel lobby

(5) $[\![\text{party}]\!] : \lambda e.\mathbf{party}(e)$

However, this noun also has a relational interpretation. This is the one that allows its use with *have*, giving rise to unambiguous sentences such as (6a). *Party* still denotes a one-place predicate of events, but in this case it is associated with the meaning postulate in (6b). The entailments associated with the $\mathbf{Arg}_1$ of this noun make it an active participant in the event; this is why (6a) cannot easily mean that a party was going on in the apartment next door and that Mary was somehow affected by this event.

(6) a. Mary had a party
b. $\forall e_o \forall w[R_w(\mathbf{party}_{k_w})(e_o) \rightarrow \exists y_o[\mathbf{Arg}_{1w}(y_o)(e_o)]]$

The case of *shower* is slightly different. This noun is ambiguous between an entity-denoting version (denoting the set of physical showers) and an event-denoting one (denoting the set of events of showering). However, unlike *party*, *shower* has only one variety of its event-denoting version: the relational one. This explains the infelicity of (7a) and (7b) (on an eventive reading of *shower*), contrasting with the grammaticality of (7c).[1]

(7) a. #There was a shower in the hotel room
b. #A shower was taking place in the hotel room
c. John was having a shower in the hotel room

[1]The noun *shower* has a different meaning where it is event-denoting but not relational, i.e. the one referring to a brief episode of rain. In this sense, it can be used in sentences like (7a).
(i) There was a shower yesterday afternoon

The availability of sentences like (2), (6a) or (7c) is not a general feature of languages with a *have*-verb. The translation of these sentences into Catalan cannot have the reading where the subject participates in an event.

(8) ??La Mary té diversió
the Mary has fun
Mary has fun

(9) La Mary té una festa
the Mary has a party
Mary has a party

(10) En John té una dutxa
the John has a shower
John is having a shower

Sentence (8) is very odd, and could only have an interpretation in a very heavy context; even in such case, it could not mean that Mary is experiencing fun. Sentence (9) could mean that Mary has a party on her schedule, but not that she is participating in a party right now. Finally, (10) can only mean that John is related to a shower as a physical entity.

How do we account for these differences between English and Catalan? I am inclined to believe that the difference does not have to do with the meaning of *have*, but rather with the denotation of these nouns in each language. The Catalan translations of *fun* and *party* are certainly eventuality-denoting, but, unlike their English counterparts, they do not have a relational variant which implies a participant and is subject to the Non-derived Relational Noun Instantiation Condition. In the case of *shower*, the Catalan translation is strictly entity-denoting. However, there are non-derived event-denoting nouns in Catalan, such as *infart* (stroke) or *accident* (accident), and in these cases the use of *have* is perfectly felicitous. Other cases, such as *sexe* (sex), which in principle are not relational in Catalan, are lately being used relationally (probably because of English influence), thereby licensing sentences like (12), extracted from a Catalan newspaper.

(11) En John va tenir un infart/accident
the John PAST have a stroke/accident
John had a stroke/accident

(12) Els empleats que van tenir sexe el dia anterior són més productius[2]
The employees that PAST have sex the day previous are more productive
The employees that had sex on the previous day are more productive

There are, of course, many other factors that need to be considered in an analysis of these sentences, having to do e.g. with the lexical aspect of the eventualities denoted by the nouns in question and their interaction with the lexical aspect of *have* and the grammat-

[2]http://www.diaridegirona.cat/salut/2017/03/07/empleats-que-sexe-dia-anterior/833238.html

ical aspect of the sentence as a whole. More research is needed, but the line of analysis sketched out here points to a potential treatment that derives the availability of such sentences (or lack thereof) from the semantics of *have* along with plausible assumptions about the semantics of these nominals.

There is another set of cases on which I will briefly comment here. So far we have been looking at instances where *have* takes non-derived eventuality-denoting nouns as objects. There are examples, however, in which *have* is used with deverbal nouns or deadjectival nouns as objects. The latter case is exemplified by the sentences in (13) (Cowper (1989), her (5a) and (5e)).

(13) a. Meryl has a performance tomorrow night
b. Ronnie had an operation last week

Nouns like *performance* and *operation* can be easily conceived of as relational: they are eventuality-denoting, and have a series of implied arguments. What is special about them is that they do not introduce one 'extra' entity-denoting argument, but rather two or more of them. (14) and (15) are the meaning postulates corresponding to these two nouns. Note that, for *performance*, I am assuming that it is an eventuality which implies three arguments: a performer, something which is performed, and someone that watches the performance.

(14) $\forall e_o \forall w[R(\textbf{performance}_{k_w})(e_o) \rightarrow \exists x_o \exists y_o \exists z_o[\textbf{Arg}_1(x_o)(e_o) \wedge \textbf{Arg}_2(y_o)(e_o) \wedge \textbf{Arg}_3(z_o)(e_o)]]$

(15) $\forall e_o \forall w[R(\textbf{operation}_{k_w})(e_o) \rightarrow \exists x_o \exists y_o[\textbf{Arg}_1(x_o)(e_o) \wedge \textbf{Arg}_2(y_o)(e_o)]]$

The arguments implied by these nouns are shared with the verbs they are morphologically derived from. $\textbf{Arg}_1$ is the argument on which these predicates impose the entailments that are normally related to the label 'Agent', and $\textbf{Arg}_2$ corresponds to the label 'Theme' or 'Patient'. In the case of *performance*, $\textbf{Arg}_3$ would be the audience for which a performance is made; let us call it 'Beneficiary'. Now, how do we interpret sentences (13a) or (13b)?

Cowper's early discussion of these cases is particularly clear. She first claims that the most straightforward reading of (13a) is the one where Meryl is the Agent of the performing event, whereas in (13b) Ronnie is more likely to be the theme. However, she then points out that 'the situation with *have* is somewhat more complicated [...]. Pragmatic considerations can determine which, if any, of the arguments of the complement is assigned to the subject of *have*. For example, if we know that Meryl is a habitual theatregoer, then [(13a)] would mean that she plans to attend a performance. If Ronnie is a doctor who only performs surgery once every few weeks, then [(13b)] would mean that he performed, rather than underwent, the operation' (1989: 88).

This situation ties in particularly well, on the one hand, with Grimm and McNally's (2013) account of the use in discourse of these deverbal nouns, and, on the other, with the view

that the kind instantiated by the subject plays a role in determining the meaning of *have*-sentences. As I already mentioned in Chapter 2, Grimm and McNally suggested the following discourse condition governing the use of exactly these nouns in discourse:

(16) **Event Instantiation Condition**: The introduction of a token discourse referent for an eventuality *e* requires that *e* be anchored to a discourse referent corresponding to at least one of its participants.

Have-sentences are a way to fulfill this condition. They anchor the eventuality denoted by the nominal to one of its participants, the subject of *have*.[3] As Cowper already noticed, the subject of *have* can be more than one of the participants in the eventuality. In chapter 2 I defended that the kind the subject instantiates in discourse is crucial to determining the meaning of *have* sentences with non-relational nouns, but I also argued that it plays no role in the determination of the meaning of *have*-sentences with relational nouns. At this point, this view might have to be nuanced: with relational nouns like *performance* or *operation*, which entail more than one argument, which one is associated to the subject of *have* is probably determined by taking a look at the kind the subject instantiates.

Take *operation* as an example. The $\mathbf{Arg}_1$ of *operation* (and *operate*) normally implies things like the fact that the entity that plays this role is a doctor. For the $\mathbf{Arg}_2$, it implies that it is a patient. If, in the discourse where (13b) is uttered, it is clear that we are talking about Ronnie as a doctor (i.e. a realization of the kind $\mathbf{doctor}_k$), then the interpretation is the one where Ronnie is taken as the value of $\mathbf{Arg}_1$; if, by contrast, it is clear that we are talking about Ronnie as a patient, then we will take him as the value of $\mathbf{Arg}_2$.

There are, however, a couple of complications. The first one is that there is a difference between nouns like *fun* or the eventive relational versions of *party* and *shower*, and these deverbal relational nouns. *Fun*, *party* and *shower* can be used to convey that the subject of *have* is participating in the event right now. By contrast, *operation* and *performance* give rise to a very clear 'schedule' reading (similar to the Catalan sentence (9) above), but they do not convey as easily that the event is going on right now. That is, (17a) is a slightly odd way of paraphrasing the meaning of (17b).

(17) a. Mary is having a performance right now
b. Mary is performing right now

This may be connected to the fact that not all arguments of these nouns can be used as the subject of *have*. The $\mathbf{Arg}_2$ of *operation* corresponds to the patient/theme of the event. Nevertheless, there is no possible discourse context that will license (18a) as a paraphrase for (18b):

(18) a. A dance had a performance yesterday

[3] Although there are obvious similarities between the account that I have been developing here and Grimm and McNally's, there are differences too. Grimm and McNally consider that these nouns are relational nouns, but resort to a Barker-style treatment. In this thesis, by contrast, I have been advocating for a different treatment of relational nouns in general, which applies to these specific cases as well.

b. A dance was performed yesterday

Another complication comes from the fact that many deverbal nominalizations cannot be used at all as objects of *have*, even in cases where they are perfectly felicitous in possessive NPs. The noun *destruction* (a classic example of deverbal nominalization) is a case in point. The possessor argument in a relational NP can be any of the two arguments of a destruction-eventuality, as illustrated by (19a) and (19b)

(19) a. President Truman approved of Hiroshima and Nagasaki's destruction[4]
b. Washington immediately announced the atomic bomb's destruction of Hiroshima and Nagasaki and released the iconic photographs of the mushroom cloud[5]

None of these meanings, however, can be conveyed by *have*-sentences. A 'schedule'-interpretation does not clearly rescue them either.

(20) a. ??/#Hiroshima and Nagasaki had (a) complete destruction
b. ??/#The atomic bomb had (a) complete destruction

To conclude this section, it seems that the account developed in the previous chapters can be straightforwardly applied to non-derived eventive nouns like *fun*, *party* and *shower*. All we need to assume is that these nouns have relational denotations in English, assuming the view of relationality defended in this dissertation. Its application to deverbal nouns is also promising, but requires future research.

5.2.2. *Have* with a coda

The literature on existential constructions uses the term 'coda' to refer to the predicative constituent that is often found in this type of sentences. As an example, *ready for action* is the coda in sentence (21a), and *in the basement* has this role in (21b).

(21) a. There were firemen ready for action
b. There is a mouse in the basement

In such cases, the pivot and the coda form a predicate-argument structure. Let me refer to it, descriptively, as a small-clause-type of structure (without committing to a small-clause type of analysis of these constructions as it is normally understood in the syntactic literature). A prominent feature of *have* is that it can take small clauses like these as its object.

(22) a. The dogcatcher had the dog in the cage (in thirty seconds) (Cowper (1989))
b. The article had me angry at the government (Myler (2014))
c. Fred had the children laughing in no time (Cowper (1989))

[4] https://www.realclearpolitics.com/articles/2015/08/08/we$_d$idnt$_h$ave$_t$o$_d$rop$_t$he$_b$omb$_1$27709.html
[5] http://apjjf.org/2014/12/3/Mark-Selden/4065/article.html

In Chapter 4, I laid out a treatment for *have*-sentences with kind-level NPs as objects. Recall that this type of example has the peculiarity that it resists the definiteness effect. Both (23a) and (23b) can have a relational interpretation, i.e. (23b) is not forced to have a contextualized interpretation, as it would if the object-NP were not kind-denoting.

(23) a. Mary has many kinds of friends
b. Mary has these two kinds of friends

I suggested that the mechanisms that allow for the interpretation of kind-level arguments in episodic contexts generally (e.g. some operation along the lines of Chierchia's (1998) Derived Kind Predication), together with the mechanisms posited in this dissertation for the interpretation of *have*-sentences in general, suffice to account for the interpretation of *have*-sentences like (23b).

I will here entertain the possibility (without fully justifying each step) of adapting this idea to *have*-sentences with a coda. Let me spell out the general reasoning behind this proposal. In recent years there has been a growing trend in the literature in favor of considering that lexical items denote in the kind domain, and that reference to token-level realizations of such kinds comes through interaction with functional material in the syntactic structures where these lexical items are inserted. The idea goes back to Zamparelli's (2000) proposal for nouns and the interpretation of NPs. In subsequent literature (e.g. Espinal (2010)), the relevant piece of functional structure mapping kinds to sets of tokens has been argued to be NumP –an idea I have already referred to in Chapter 4.[6]

At the same time, a consensus is developing that along with kind-level counterparts of entity-denoting predicates, one should have kind-level counterparts of eventuality-denoting ones (e.g. Carlson (2003), Gehrke (2015), Grimm and McNally (2015), Anderson and Morzycki (2015)). The idea in this case is that predicates denote *kinds* of eventualities, and that realizations of these kinds enter the discourse through the interaction with the functional material associated with a finite verb form (on the standard syntactic assumptions, functional heads related to tense and aspect). Now, *have*-verbs accept small-clause structures where the predicate is a PP, an AP or a non-finite verb form. All these predicates can plausibly be taken to denote kinds of eventualities, giving rise to eventuality-kind-denoting small-clauses. Interaction with (finite forms of) *have* will (i) introduce a token-level realization of this eventuality-kind into the discourse to support the truth of the sentence (as I have defended in the case of kind-level NPs) and (ii) assign a role to the subject of *have* with respect to this token-level eventuality.

In the rest of this section I will sketch how this proposal could work. Before we go on, however, let me add a caveat. There is a difference between *have*-sentences with a coda that feature discourse-new nouns as the subject of the small-clause, and those which do not. This is particularly clear when the relevant NP is relational. The difference is illustrated by the following triplets.

[6]I have not followed Zamparelli's proposal in this dissertation. I believe however, that the approach I am advocating for could be rather easily recast along the lines of Zamparelli's proposal.

(24) a. John has his sister/friend in the army
b. John has the car in the garage
c. John has a sister/friend in the army

(25) a. Mary has his sister/friend angry
b. John has Mary angry
c. ?Mary has a sister/friend angry

(26) a. John has his sister/friend looking after him
b. John has the person I was talking about looking after him
c. John has a sister/friend looking after him

The (a) and (b) examples put the subject of *have* in relation with a state involving a particular entity whose existence is independent of this subject. That is, the small-clause denotes a state (e.g. a state of a particular car being in a particular garage, as in (24b)), and what *have* does is relate its own subject with this state. The subject of *have* plays a role with respect to this state *as a whole*. In other words: the truth of (24b) does not imply the truth of *John has the car*; the truth of (25b) does not imply the truth of *John has Mary*; and the truth of (26b) does not imply the truth of *John has the person I was talking about*.

The (c) examples are different. Take (24c), which is used by Landman (2004) and Sæbø (2009). Assuming that the argument *a sister* is discourse new, this sentence does two things: (i) it introduces into the discourse an entity which is connected to John by a siblinghood/friendship relation (through the mechanisms defined in the previous chapters of this dissertation), and (ii) it asserts that this entity is currently 'located' in the navy. The subject thus plays two different roles in this sentence: on the one hand, it licenses the use of the relational noun; on the other, it is put in relation with the state of the entity denoted by the relational noun being in the navy. That is, the role John plays in relation to the entity picked out by *a sister* is independent of the fact that this entity is located in the navy at a particular moment. In other words, the truth of all the (c) examples above do imply the truth of *John has a sister*. Therefore, they contrast with the (a) and (b) examples. Note also that in the case of (25c), the sentence becomes somewhat degraded. All this shows that the (c) sentences pose additional syntactic and semantic challenges, and I will leave an account of the exact mechanisms that make them work for future research.

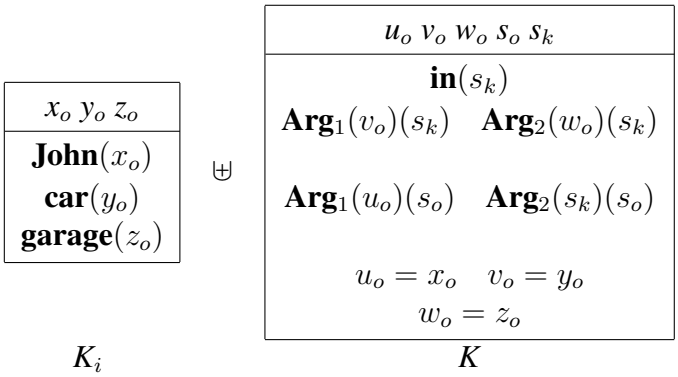
In the following I will use the cases where *have* takes a PP as a coda to illustrate how an account on the lines I have put forward could work. Let us consider the relevant cases from (24) above, repeated here.

(27) a. John has the car in the garage
b. John has his sister in the army

As I said, I will consider the structures *the car in the garage* and *his sister in the army* as denoting kinds of eventualities. In the case of PPs, they will denote state-kinds. *Have* takes this state-kind as an argument. Following the DRT treatment I have developed in

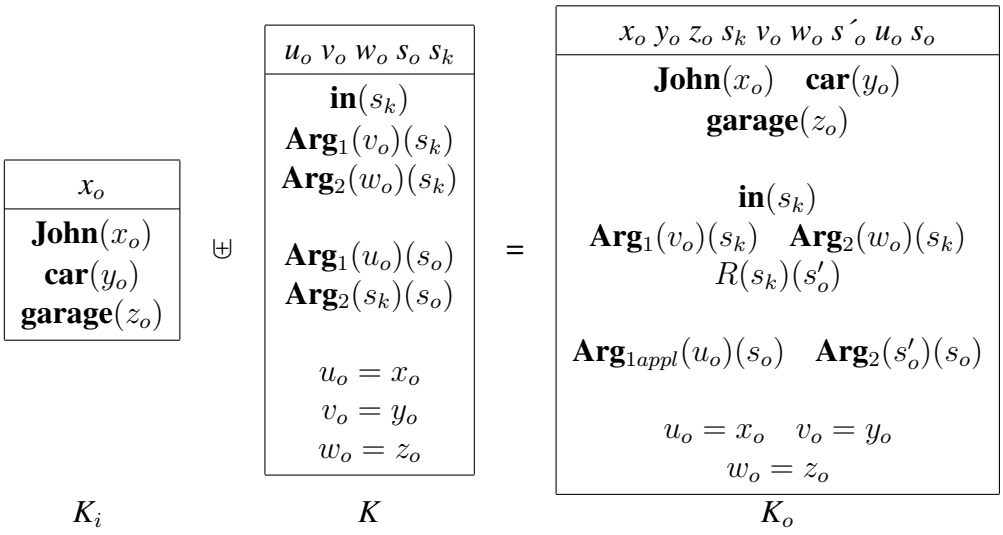
Chapter 4, the contribution of (27a) in a discourse (assuming that the presuppositions associated with the proper noun and the definite articles are resolved) is represented in (28).

(28)



The truth of (27a) does not depend on John being connected to a state-*kind*. It implies that the state described by *the car in the garage* holds at the situation of evaluation, and that John has a certain relation to that state-*token*. As I did with kind-denoting NPs, I will capture this through the introduction of a realization relation *R* between the state-kind denoted by the small clause and a state token; this state token is the one that becomes the argument of *have*. This is built as part of the merge operation between K_i and *K*.

(29)



According to (29), the contribution of (27a) into the discourse is the following. The sentence introduces a relation between John and a state-kind. This state kind is a state of a particular car being in a particular garage. This state kind can be realized by state tokens in different moments in time, i.e. situations where the relevant car happens to be in relevant garage. What the sentence (27a) does is assert that at the moment of evaluation (the moment of utterance, since *have* is in the present tense), a realization of that state-kind holds, and it also asserts that John is somehow connected to this state.

How do we interpret the relation of John with that state? The state denoted by the preposition *in* implies two core participants, here *the car* and *the garage*. John can only be

associated with the state as a non-core argument: the available interpretations seem to be that he has something to do with the bringing about of that state (he is a 'causer' or a 'controller'), or that he is somehow affected by that state holding (he is a 'beneficiary' or a 'maleficiary'). Since these roles are reminiscent of the way applicatives can introduce 'extra' arguments in an eventuality, I have labeled the first argument of *have* as *appl*. This is intended to capture the range of possibilities of interpretation this argument can have with respect to the state described by the second argument of *have*.

I have here outlined an account that gives a plausible explanation of the workings of *have*-sentences with small clause complements whose predicate is a PP. This explanation is built on the theory presented in the previous chapters. It requires certain additional assumptions about the treatment of eventuality-denoting predicates, but these are assumptions that have already been made in the literature for independent reasons.[7]

It seems plausible that this treatment for *have*-sentences can be extended to codas other than PPs. Small-clause like structures like 'Mary angry' (from (25b)) or 'the person I was talking about looking after him' (from (26b)), which involve event-denoting predicates without any finiteness-introducing element, can arguably denote state-kinds. A very similar treatment to the one I have outlined for PP-codas can then be applied to them. The issue is obviously complex and there is a lot of existing literature (particularly on *-ing* forms) whose insights need to be taken into account. Considering even a small fraction of this literature here would be well beyond the scope of this chapter. I hope, however, to have provided a promising viewpoint for future research on the matter.

5.3. *Have* and *be*

There is a long line of research in the typological and syntactic literature which assumes that *be* and *have* are two different surface representations of one single element that gets realized as different lexical items in different conditions. These conditions have to do with information structural factors and/or the hypothesized syntactic structure where they are inserted (Benveniste (1966), Lyons (1968a), Clark (1978), Szabolcsi (1981), Freeze (1992), Kayne (1993), Harley (1995), Myler (2014), among many others). On this view, *have* is the form *be* adopts in certain environments which are more 'marked' or 'complex' than simple copular sentences. The syntactic literature from Freeze and Kayne onwards has popularized the idea that *have* is the result of incorporating an abstract preposition to *be*; this discussion has already been introduced in section 1.3.9.

[7] There is, however, a group of sentences with PP-codas that is not covered by the account sketched here. These are the ones where the PP contains a pronoun co-indexed with the subject of *have*; similar cases feature a verb instead of a PP, as in (ic). The following examples are from Myler (2014: 370, his (16a-c)):

(i) a. The tree has nests in it
b. I have a cockroach on my head
c. The stadium has two pubs flanking it

These examples contrast with the ones above in that they involve two participants instead of three, and in the fact that the subject of *have* can only have one interpretation (being one of the arguments of the preposition in the small clause). Whether such sentences can be reduced to the same type of explanation that I have put forward in this section remains as a subject for future research.

There are several reasons why such a hypothesis makes sense intuitively. To take the one most relevant to this dissertation, I mentioned in the introduction that languages with a verb *have* are a minority (around 25% of the world's languages, according to Stassen (2013)). The most common strategies to express predicative possession involve a copular verb with some sort of oblique marking on either the possessor or the possessee, or an existential predicate where the possessor is introduced either by a PP or by marking it as the sentence topic (see e.g. (Heine, 1997: 47)). According to most of the syntactic literature on this issue, the fact that *have* is relatively uncommon cross-linguistically follows from the fact that it is a more 'complex' form than *be*.

Be and *have* also alternate as auxiliaries for compound tenses in many languages. The rough generalization is that unaccusative verbs take *be* as an auxiliary, whereas unergatives and transitives take *have*. Practically all major Romance and Germanic languages showed auxiliary alternation between *have* and *be* a thousand years ago; nowadays only some do (see Sánchez-Marco (2012) and Bassaganyas-Bars (2015) on the loss of *be* as a perfect auxiliary in Spanish and Catalan respectively). Isolates like Basque show the same feature. Basque also offers an example of syncretism between some forms of the paradigms of *be* and *have*: they share the same past participle. A similar situation obtains in Breton according to Myler (2014: 215-216).

The evidence might look compelling, and I could not possibly discuss all the arguments that have been put forward in favor of this hypothesis in any detail here. I will just suggest an alternative way of explaining the apparent complementarity between *have* and *be* across many languages without running into the problems that the complementarity hypothesis has to face –some of which have been already discussed in relation to the specific implementation of this idea in Myler (2014) (see section 1.3.9).

One of these problems can be very simply put: if *have* is *be* with something incorporated to it, it is surprising that *have* and *be* are absolutely distinct morphologically in language after language. One generally cannot find in *have*-verbs any trace of its alleged source *be* nor of the 'abstract preposition' that is in theory incorporated to it. Myler (2014: 72) mentions one single case (the Sino-Tibetan language Qiang) where *have* does indeed look like a copula plus a causative morpheme. If one defends that *have* is uncommon cross-linguistically because it is 'more complex' than *be*, it is unexpected that, among *have*-languages, the overwhelming majority of them follow the in principle more complex strategy of completely masking the connection between the two verbs on the surface by resorting to two unrelated lexical items, instead of showing this connection overtly, like Qiang. Despite there being some evidence in its favor, the complementarity hypothesis has to face the fact that the change from *be* to *have* needs to be stipulated to make the theory work, because other overt evidence of this complementarity is lacking.[8]

[8] A related problem can be raised by looking at the evolution of Catalan and Spanish. In these languages, the form *tenir/tener*, originally meaning *to hold*, has replaced *haver/haber* as the 'possessive' verb. In both cases, the copula has not changed. It is unclear why at some point incorporating an abstract preposition to this copula yielded *haver/haber*, and in a later period the same process resulted in *tenir/tener*, especially given the fact that *ser*, *haver/haber* and *tenir/tener* are historically unrelated to one another.

Here I will just sketch out an alternative view of the connection between *be* and *have* that would not have to face this and other challenges. It has been repeatedly noted in the literature that there are limits to the relations *have* can express. Although (30) can in the right context be used to convey many relations between Mary and a teacher, it certainly cannot mean that Mary *is* a good teacher.

(30) Mary has a good teacher

The reason for this is that *have* is not a copular verb at all. *Have* relates two different entities which exist as such in the discourse (even though I have argued that the object is introduced into the discourse insofar as it is connected to the subject). In DRT terms, each argument of *have* introduces its own discourse referent, associated with its own variable. The result of updating an empty discourse context with (30) results, on the approach defended here, in the DRS in (31) (assuming that the relational noun *teacher* entails a **student-teacher** relation).

(31)

x_o y_o s
Mary(x_o)
teacher(y_o)
student-teacher(s)
Arg$_1(x_o)(s)$
Arg$_2(y_o)(s)$

In contrast to the object of *have*, predicate nominals do not introduce discourse referents into a DRS, but rather discourse conditions. The function of copular structures is precisely to relate a discourse condition to a discourse referent. Therefore, the representation of the copular sentence (32) corresponds to the DRS in (33).

(32) Mary is a good teacher

(33)

x_o
Mary(x_o)
good(x_o)
teacher(x_o)

If the difference between *have* and *be* is that simple, why is it that *have*-languages are a minority? A potential explanation is that *have* is unlike any other transitive verb. It establishes a relation between two discourse referents without contributing any meaning of its own. The determination of the meaning of the sentence is completely up to its arguments and/or the discourse situation where the sentence is uttered, through the mechanisms I have laid out in Chapters 2, 3 and 4. *Have* does not, by itself, impose any restriction on its arguments.

All other transitive verbs, no matter how 'light' they are, do impose at least some restric-

tions on their arguments; they have some meaning, even if it is vague or very general. A verb like *take* is certainly vaguer than verbs like *kiss* or *engrave*, but it has some content. *Have* is, in short, a unique creature, because the kind of relation it has to be the scaffolding for (one that does not depend on verbal meaning, but is up entirely to the arguments and the context) is a unique kind of relation that no other verb is capable of being the vehicle for.

Have-verbs generally derive from contentful verbs, most frequently from verbs meaning things like *to seize*, *to take*, *to grab*, *to hold*, etc. (Heine, 1997: 47ff). These verbs are bleached from their content and start serving as a meaningless link between two entities. Nevertheless, there are alternative ways a language can come to express this unique kind of relation. Since this relation requires a meaningless element connecting two independent entities, a language can use the copula (the meaningless verbal scaffolding par excellence) and make it work as a bridge between two entities, instead of connecting a discourse referent and a predicate nominal.

The way to do that is to mark one of the relata with a preposition. Prepositions generally select for referential NPs as their arguments. The copula will then ultimately relate a referential NP to another referential NP, the one inside the PP. There are a number of ways to achieve that: one can, for instance, mark the possessor with a preposition generally used to express location, as happens in Russian.

(34) U menja kniga
at me book
I have a book (Russian. Lyons (1968a: 394))

Another possibility is to mark the possessee with a comitative preposition, as in Freeze's (1992) famous example in Portuguese, which can be translated into Spanish.

(35) O menino está com fome
The kid is with hunger
The kid is hungry (Freeze (1992))

(36) El niño está con hambre
The kid is with hunger
The kid is hungry

There are other attested strategies, such as using the same predicate that is utilized for existential constructions in a language (which are generally used to connect two independent entities, the pivot and a location), and assimilate the possessor argument to the location. This strategy involves further complications that I cannot tackle here. However, it also shows that possessive relations are relations between two independent entities that are unlike any other relation languages need to express. This anomaly is what makes languages 'recycle' other resources they have: they may bleach an already existing transitive verb so that it becomes meaningless; they may take the copula and use it in a structure where it relates two entities, instead of an entity and a predicate nominal; or they may recycle

an existential construction, which is arguably also a way to take a relation determined by the meaning of the arguments to the sentence level. The relative rarity of *have*-verbs cross-linguistically then follows from the fact that 'creating' such a verb out of a content-ful transitive verb is only one of many possible ways of achieving the relevant result, with all the rest involving a copula or an existential predicate.

5.4. Uses of *have* in other languages: Old Catalan and Old English

One of the reasons I became interested in the workings of *have* is the staggering variety of uses this verb is put to in Old Catalan, compared to the modern version of the language. In Old Catalan, *have* can be used with a wide range of property concepts (Dixon (1982), Koontz-Garboden and Francez (2010)) where the modern language would employ adjectives. Among the examples in (37), only (37a) would use *have* (specifically, *tenir*) in the modern language.[9]

(37) a. eu **avia fret** e tu·m cobrist
I had cold and you.me covered
'I was cold and you covered me'

b. **ac** gran **alegretat** del seu convertiment
he-had great joy of his conversion
'he was very joyful about his conversion'

c. del qual multiplicament **ha ira** e **tristícia**
of which multiplication he-has ire and sadness
'because of this multiplication he is irate and sad'

Another surprising use of *have* (from the point of view of modern Catalan speakers) is the wide array of eventuality-denoting nominals it can take as objects. None of the following examples have a natural translation using *have* in the modern language; a verb morphologically related to the nominal in the complement of *have* would have to be used instead.

(38) tu no **auràs perdó**, mas entraràs en la perfonda càrcer
you NOT will-have forgiveness, but you-will-entry in the deep prison
you will not be forgiven, instead you will wind up in a deep dungeon

(39) no **as membrança** de les vertuts
NOT you-have remembrance of the virtues
you forget the virtues

(40) **ages maledicció** per tots temps!
have damnation for all times
may you be forever cursed!

[9]The Old Catalan data used in this section come from the corpus of Old Catalan being compiled at the Universitat Pompeu Fabra. Most of these examples are extracted from the 13th-15th century section of the corpus. Some examples come from Ramon Llull's *Doctrina Pueril*, a text from the 14th century, which is not part of this corpus.

(41) els homes d'Algisira **agren sabuda** d'aquest fet
the man of-Algeciras had learning of-this fact
the men in Algeciras learned about this fact

Akimoto and Brinton (1999) and Fontana (2017) present very similar data for Old English. In this language, the verb *habban* similarly combines with nouns denoting property concepts and eventive nouns to a much greater extent than present-day English *have*. Many of the combinations involving *have* and one of these nominals have an exact counterpart in Old Catalan, as illustrated by the following equivalences.

Old English	**Old Catalan**	**Meaning**
sorge/hweowe habban	aver tristícia/tristor	have sorrow
lufe habban	aver amor	have love
andgyt habban	aver enteniment	have understanding/sense
spraæce habban	aver/tenir parlament	have speech
ðearfe habban	aver obs/mester/necessitat	have need
geθeaht habban	aver consell	have counsel
andan habban	aver enveja	have envy

The account of *have* developed in this dissertation was designed for present-day English. In section 5.2.1, when I dealt with the availability of expressions like *have fun* or *have a shower* in English and its lack in other languages with a *have*-verb, I attributed the difference to the fact that the English nouns *fun* and *shower* both denote eventualities and are relational, whereas the equivalent nouns in Catalan are eventive but not relational (*diversió*, 'fun') or neither eventive nor relational (*dutxa*, 'shower'). The difference, thus, does not have to be attributed to a difference in what *have* can do in English versus what it can do in Catalan.

The explanation of the contrast between Old English and Old Catalan and their present-day counterparts could follow similar lines. Let us first tackle property concepts like *joy* or *sorrow*. Dixon's (1982) seminal work on the topic already contains the idea that most languages express these kinds of meanings either with a copula and an adjective, or with a possessive verb and a noun. Present-day English is an example of a language that uses the copula + adjective strategy almost exclusively. Catalan, Spanish or German are too, but they occasionally resort to the possessive verb + noun strategy (as in the equivalents to *be hungry* or *be thirsty*). It seems that Old Catalan or Old English could resort to this type of strategy much more systematically.

That does not have to mean, however, that neither *have* nor property concepts changed meaning.[10] On the present view, property concepts are relational nouns: they denote a state, and they entail a participant which bears that state. This predicts that, if used with *have*, the subject of *have* will unambiguously denote the bearer of this state even in present-day English. There are indeed naturally-occurring examples of this type.

[10]This view is in tune with the approach to language change advocated for in Fontana (2014) and Fontana (2017), according to which linguistic change does not have to be traced down to the individual words, but rather to the constructions these words appear in.

(42) a. We have sorrow and all kinds of emotions, empathy, sympathy for what has occurred[11]
b. She had beauty and talent. What she didn't have was belief in herself[12]
c. Kennedy has intelligence and energy, if he gets one foot in the door he can sweep Congress away[13]

The reasons why present-day English or Catalan do not use this strategy to predicate property concepts of individuals as systematically as their medieval counterparts probably has to do with reasons other than a change in the semantics of *have* or property concepts. The present account predicts that it should be possible to interpret sentences where *have* takes a property concept as an object as essentially equivalent to their counterparts using copulas and adjectives. This seems to be the case.

The other case are eventuality-denoting nominals derived from verbs or adjectives, like *perdó* (forgiveness) in (38), *membrança* (remembrance) in (39), *maledicció* (damnation) in (40), and *sabuda* (learning) in (41). Take the nominal *sabuda*, which is conspicuously derived from the verb *saber* (to know, to learn). *Saber* has two core arguments, the internal one (the 'knowee') and the external one (the 'knower'). *Sabuda* takes a PP which corresponds to the internal argument, resulting in the NP *sabuda d'aquest fet* (learning of that fact). The subject of *have* then plays the role of the external argument of the verb from which *sabuda* is derived: it has to be interpreted as the knower.

A similar situation obtains with respect to the other eventuality-denoting nominals. In (38), the subject plays the role of the internal argument of the verb *perdonar* (to forgive); in (39), the subject of *have* plays the role of the external argument of *membrar* (to remember), and in (40) the subject of *have* plays the role of the internal argument of the verb *maleir* (to damn, to curse). In every case, the subject of *have* plays the role of a core argument of the event denoted by the verb each nominal is morphologically related to. This can be explained by conceiving of these nouns as relational. Nevertheless, they differ from other relational nouns in that they imply *two* arguments instead of one. They can be accepted as the object of *have* if they first get their second argument saturated. For instance, the denotation of *sabuda* (learning) would look like in (43a). I will use here the notation $\mathbf{Arg}_{int}$ and $\mathbf{Arg}_{ext}$ for illustrative purposes.

(43) a. $[\![\text{sabuda}]\!] : \lambda x \lambda e.[\mathbf{learning}(e) \wedge \mathbf{Arg}_{int}(x)(e)]$

In a way, then, these nominals are the true relational nouns in the Barkerian sense: they need to take an argument to become a one-place predicate of eventualities. In (41), this argument is *aquest fet* (that fact).

(44) $[\![\text{sabuda d'aquest fet}]\!] : \lambda e.[\mathbf{learning}(e) \wedge \mathbf{Arg}_{int}(\mathbf{that\ fact})(e)]$

The one-place predicate of eventualities corresponding to *sabuda d'aquest fet* then be-

[11] CoCA
[12] CoCA
[13] CoCA

haves as a relational noun not in the Barkerian sense, but in the sense defended in this dissertation: it is a one-place predicate with an associated meaning postulate concerning its use in discourse.

(45) $\forall e_o \forall w.[R(\textbf{learning of that fact}_{k_w})(e_o) \rightarrow \exists x_o[\textbf{Arg}_{ext}(x_o)(e_o)]]$

We are not dealing here with non-derived relational nouns like *sister* or *fun*, but rather with derived relational nouns. The use of discourse of these nominals was argued to be governed by the Event Instantiation Condition in Grimm and McNally (2013). The prediction is then that, if *have* takes the event-denoting *sabuda d'aquest fet* as its object, the Event Instantiation Condition will be fulfilled: the event will be anchored to the subject of *have*. According to my own view of relational nouns, the meaning postulate in (45) makes sure that the subject of *have* will necessary play the role of $\textbf{Arg}_{ext}$ in the event, as seems to be the case.

These cases thus contrast with the examples involving *performance* or *operation* that I reviewed above: recall that in those sentences the role of the subject of *have* in the event was not fixed, and could be open to interpretation depending on the discourse context. Much more research is needed on this particular issue and on all the uses of *have* that I have considered in this chapter. This brief discussion, however, has hopefully defined a possible starting point from which all these research questions can be tackled.

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