

Possession and Pertinence: The Meaning of *have*

Abstract. The meaning of *have* is notoriously difficult to define; sometimes it seems to denote possession, but often, it seems to denote nothing, only to complicate composition. This paper focuses on the cases where *have* embeds a small clause, proposing that all it accomplishes is abstraction, turning the small clause into a predicate. This analysis is extended to the cases where *have* appears to embed DPs: These objects are interpreted as small clauses as well, with implicit predicates denoting possession or – with relational nouns – nothing.

Keywords: possession, pertinence, abstraction, binding, relational

1. Introduction

The semantics of the word *have* is not well understood. On the one hand, there is “the “true verb” *have* (roughly, ‘to have at one’s disposal’)” (Partee 1999: 7), a transitive verb like any other, although the meaning is rather vague:

- (1) The vinyl shop has all the latest releases on vinyl.
- (2) My father has the farm next to the pub.
- (3) East has the Queen of Hearts.

On the other hand, there is “existential *have*” (Partee 1999: 7), where the verb does not seem to carry a meaning of its own. The object noun tends to be relational, and only weak DPs, with indefinite or cardinal determiners, are allowed as objects (Jensen and Vikner 1996, Gutiérrez-Rexach 2007):

- (4) The crime had two victims.
- (5) America has enough enemies as it is.
- (6) You have a rich daddy and a good-lookin’ mama.

The subject seems to saturate the internal argument of the relational noun, and all *have* seems to do is act as a bridge between the latter and the former. In addition, there are serious composition problems involved: One would want the subject to combine with the noun before the determiner does.



1.1. PREVIOUS PROPOSALS

Landman and Partee (1987) showed how in cases like (4)–(6), the subject can fall into the right slot after the noun has combined with the determiner and the result has combined with the verb, if the determiner and the verb are ascribed separate “relational-case” denotations. But naturally there is a cost to such extra types.

Freeze (1992) and Szabolcsi (1994) achieve a similar effect without extra types by positing overt subject raising from a possessive phrase. (5) and (5a) have the same base. Elaborating on this, Partee (1999) remarks that “it is as if the subject of the *have* sentence is a moved instance of a quantified-in possessor”.

- (5) a. There are enough enemies of America as it is.

Again, there is a cost: the change from *be* to *have* must be stipulated.

These two approaches have in common that *have* only has a formal semantics; in effect, it is reduced to *be*. This reduction may accord well with our intuitions concerning (4)–(6), but to reconcile it with (1)–(3), it seems necessary to assume an ambiguity in *have*, something which carries a separate cost.

Landman (2004) proposes an alternative analysis: *have* in cases like (4)–(6) has lost its possessive meaning and become trivialised to that relation between two entities and a state that holds of any such triple.

- (5) b. America have an enemy

This triggers semantic incorporation of the indefinite relational NP *an enemy*: originally denoting a binary relation, it is shifted to denote that relation between two individuals x and y and one state s such that s is a state of y being enemy to x (Landman 2004: 204f.). This sister relation then intersects with the trivial *have* relation, staying the same. Finally, this relation is shifted, through a local existential closure operation, to a predicate as far as individuals are concerned: that relation between an x and an s s.t. s is a state of some y being enemy to x . Thus (5b) will denote the set of states of some entity being enemy to America.

It is unclear, however, how the analysis extends to cases like (4)–(6); it would seem that cardinal determiners and adjectives must be shifted to a relational type. Because the analysis is set in an adjectival theory of indefinite NPs, where these words denote sets of (nonatomic) individuals, such a shift may be less costly than on the analysis of Landman and Partee (1987), but it is nonetheless necessary.

I will return to Landman’s proposal in the light of the phenomenon to be considered next.

1.2. THE NOVEL PROBLEM

Beside what Jensen and Vikner (1996) call “the double nature of *have*”, there is a class of contexts which so far has barely been attended to.

- (7) The beetle had the engine in the rear.
- (8) She has all four grandparents alive.
- (9) Shrek has a donkey for a friend.

The object of *have* is evidently here not a DP but a small clause (an SC),¹ consisting of a DP and a nonfinite predicate. The DP can be any, even a strong DP, with a definite article or a quantificational (proportional) determiner. As noted by Fabricius-Hansen (2006), the fact that a small clause can figure as the argument of *with* or *have* has scarcely been appreciated, still less understood. (Two exceptions are Iatridou (1996) and Landman (2004); see 1.2.3 and 1.2.4 below.)

Note that the *have* under consideration here is distinct from the “causative” *have* and from the “affectee” (de Acosta 2006) or “experiencer” (Tantos 2006) *have* with a past participle or infinitive predicate, though the latter is similar. The differences can be brought out in a 3-way ambiguous sentence like (10a); the “affectee” reading coincides with the verbal passive reading of (10b), while the “attained state” reading (de Acosta 2006) under consideration here coincides with the adjectival passive reading of (10b).²

- (10) a. She had her door locked.
- b. Her door was locked.

In Mainland Scandinavian, the “affectee”, dynamic reading, like the causative reading, must be rendered by the verb *få* (‘get’), while the “attained state”, static reading is rendered by the verb *ha* (‘have’); German has a parallel division between *bekommen* and *haben*.

The problem can be factored out into two subproblems:

1. As it appears, the subject of *have* must bind a variable in the SC.
2. Beyond binding some variable in the SC, the subject of *have* seems to have no semantic role to play.

The first I will call the *Pertinence Problem*, the second the *Redundancy Problem*.

¹ I use the term small clause in a heuristic sense, aware that its status is unclear.

² de Acosta uses the term “affectee” in a narrow and a wide sense; in the wide sense, it covers static, “attained state” cases as well.

1.2.1. *The Redundancy Problem*

To see the latter one clearly, note that the subject of *have* cannot generally be taken to saturate the internal argument of a relational noun in the SC subject, because a relational noun can have a possessive anaphor modifying it, as in (11), and, a relational noun can be missing, as in (12):

(11) She has all her grandparents alive.

(12) I had a gun pointing at me.

Indeed, in these cases the whole matrix seems dispensable; all (11) seems to say is that all her grandparents are alive and all (12) seems to say is that a gun was pointing at me.

1.2.2. *The Pertinence Problem*

As for the Pertinence Problem, although in most cases the subject of *have* binds an anaphor or saturates the internal argument of a relational noun in the SC, in many cases the variable it binds is more implicit, as in (13).

(13) I have a spy aboard.

Note that there are two ways to satisfy the Pertinence criterion here: I can be a shipmaster or a spymaster; in the latter case, the noun *spy* is covertly modified by some pertinence relation to me (like ‘of mine’), whereas in the former case, a missing DP (say, ‘my ship’) is understood to contain such a relation.

Negative evidence in this regard would consist in data like the following.

(14) #We had the weather overcast.

(15) #Chioma has Chinyere’s hair braided.

(16) #John has Mary’s mother living close to her.

Here it is next to impossible to imagine the subject of *have* binding a variable in the SC. The SC content may be bene- or malefactive to us, her, or him, but that is evidently not enough to license the construction.

Actually, it is marginally possible to imagine contexts where (14)–(16) make sense after all: if we were somehow in control of the weather, at a film set, say, (14) might not be infelicitous. There are many ways to read a bound variable into the small clause; more exactly, to understand the small clause in such a way that its semantic value depends on the semantic value of the subject. In other words, the Pertinence criterion is not sharp at the edges, but rather than cast doubt on it, this insight goes to consolidate the criterion.

1.2.3. *Iatridou's (1996) Suggestions*

Iatridou (1996) draws attention to the fact that HAVE in Modern Greek and English can have a small clause object, and observes that “HAVE behaves as if it wants a variable in its complement”, a variable which must come either from a weak NP or from a Stage-level SC predicate, which may be covert. When the object appears to be a strong NP, this covert predicate, which Iatridou calls TEMP/LOC to indicate that it has temporal and locative properties, “is obligatory because it is the only way for HAVE to find a variable in its complement” (Iatridou 1996: 198).

Thus the observation that *have* can have a small clause object is not quite new, nor is the idea that this fact has theoretical significance. The claim that *have* needs a variable in its object is suggestive of the Pertinence Problem formulated above. Moreover, the idea of positing a covert predicate will prove useful in the analysis of cases like (1)–(6).

Iatridou did “not have space to go into the more important question of why HAVE needs a variable in its complement” (Iatridou 1996: 199). Section 2 below is devoted to giving an answer to that question by way of a formal analysis of *have*.

1.2.4. *Landman's (2004) Proposal*

Landman (2004: 202f.) claims that the analysis he develops for *have* (cf. Section 1.1) extends unproblematically to cases like (17):

(17) John has a sister in the army.

Recall that on that analysis, the *have* at issue here, where the possessive meaning is missing, denotes the trivial relation between two individuals and one state. Landman assumes that “whether or not you want to analyze the construction . . . **syntactically** as a small clause, **semantically** a complex predicate is formed: *have in the army*.” He does not specify how, but let us say that this denotes the relation $\lambda x \lambda y \lambda s \textit{ita}(y)(s)$. The merge with *a sister* coerces semantic incorporation and yields the relation $\lambda x \lambda y \lambda s \textit{sister}(x)(y)(s) \wedge \textit{ita}(y)(s)$. The type shifting operation PASS applies, closing the *y* argument existentially: $\lambda x \lambda s \exists y \textit{sister}(x)(y)(s) \wedge \textit{ita}(y)(s)$. Applied to John, this results in the set of states of someone being sister to him and in the army, as intended.

So far, so good; but there are two problems for this analysis of the phenomenon. First, it is difficult to see how it would extend to cases like (12) (and such cases abound): what forms the complex predicate with *have*, and what remains to be semantically incorporated into the complex predicate? Landman only considers relational nouns (in non-possessive cases) and restricts “the construction” accordingly: “Since non-relational noun phrases are not of the relational type . . . , they cannot be incorporated” (p. 206); yet normal nouns are just as common.

Second, it is impossible to see how the analysis would extend to cases like (7) or (8) – and these cases abound too: Quantificational or definite NPs based on relational nouns are not supposed to be possible; because they “are not born at type $\langle d, \langle d, t \rangle \rangle$, they cannot be incorporated” (p. 206). In sum, Landman’s analysis is too narrow in scope to account for all the cases where *have* appears to embed a small clause.

1.3. THE SOLUTION

The idea I wish to explore is that in these contexts, *have* denotes abstraction, that is, the *have* stem contributes, in effect, λx_i for an index i coming from the subject. It does so indirectly, by absorbing, in a sense to be made precise, the trace of the QRed subject. This creates a pressure on the SC to provide a variable for that λx_i to bind; more accurately, abstraction is vacuous and both *have* and the subject are redundant unless the SC contains a variable bearing that same index i , – or, to be exact, unless the semantic value of the SC depends on the semantic value of the subject. Such a variable can be present in an anaphor, a relational noun, or in some implicit relation of possession. The analysis is thus in the spirit of Ritter and Rosen (1997: 295), who write that in contexts like these, “the subject receives an interpretation via coreference with a constituent in the predicate”.

In a next step, this analysis is extended to cases like (4)–(6), where the object would appear to be a DP, but a necessarily weak DP with a relational noun. Here, I say that the (indefinite or cardinal) determiner takes the whole domain (more precisely, the relation $\lambda x \lambda s \textit{exist}'(x)(s)$) as a covert second argument. The ban on strong DPs is predicted to result from their making the sentences tautologous or contradictory, as proposed by Barwise and Cooper (1981) for *there be* sentences and by Landman and Partee (1987) for *have* sentences.

To extend the analysis to cases like (1)–(3), where there is no relational noun to provide a variable for *have* to bind, a more substantial covert second argument, corresponding to the nonfinite predicate in a full-fledged SC complement, is called for. This might in principle be any predicate, but conventionally it is something like *at one’s disposal*, *in one’s possession*, or *as part of one* (cf. Jensen and Vikner 1996).

Next, I show how basically the same analysis applies to *with*, the main difference being that abstraction is brought about not by QR but by relativisation. In a last step, building on suggestions made by de Acosta (2006), I show how the analysis of cases like (10a), with a perfect participle, can provide a basis for understanding the development of the periphrastic perfect tense.

2. Absolute Abstraction

In this section, elaborating on an idea of Ede Zimmermann's, I will show that both the Pertinence Problem and the Redundancy Problem arising in cases like (7)–(13) can be solved if *have* is assigned the semantic role of **abstraction**. More exactly, if *have* is assumed to transform the small clause to a predicate, abstracting over a variable x_i where the index i is borne by the matrix subject, this predicate can act as argument for the subject and the function it denotes is nonconstant just in case that subject binds something in the small clause; otherwise, both *have* and the subject are redundant. Schematically:

$$Q_i \quad \lambda x_i \quad [\dots x_i \dots]$$

He has his fly open

Thus the verb stem *have* does two things at once: It makes sure that the subject binds something in the SC, and, it supplies the abstractor which is necessary because the subject lacks a θ role.

In actual fact, to avoid coindexing *have* with its subject, this effect is achieved in this way: the subject is QRed and its trace is absorbed by *have*; the binding of the variable in the SC is accomplished by the abstractor introduced through the interpretation of QR according to Reinhart (1983), Heim (1998), Heim and Kratzer (1998), or Buring (2004), all essentially building on Montague's (1973) Quantifying In:

$$Q \quad \lambda x_i \quad x_i \quad \lambda x \quad [\dots x_i \dots]$$

He has his fly open

2.1. SYNTAX

To specify the analysis, I start by presenting the Logical Form (LF) of a case where the matrix subject binds an anaphoric pronoun in the small clause:

(18) Most cars have their engine in the front.

I assume a theory of coreference as cobinding along the lines of Reinhart (1983) and Heim (1998). DPs are freely assigned indices and subjected to Quantifier Raising,

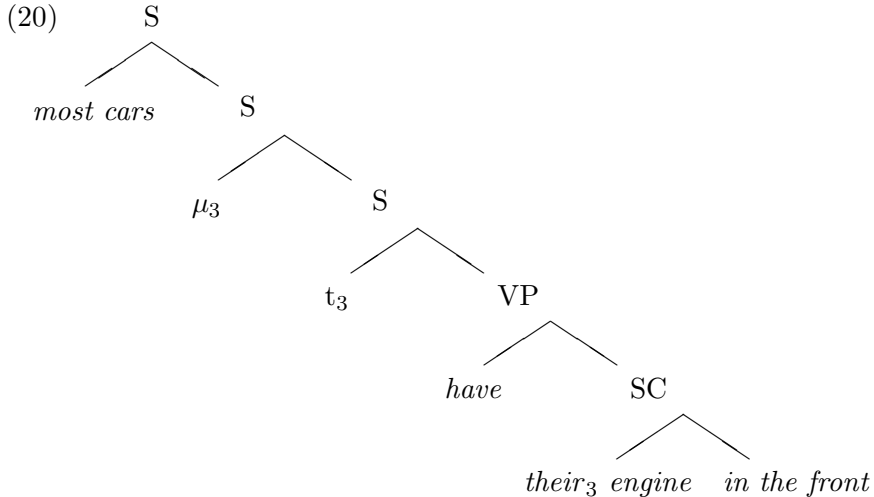
- substituting a trace t_i for a DP Q_i ,
- adjoining Q to a dominating node, and
- adjoining to the sister of Q μ_i , to be interpreted as λx_i .

The no(ta)tion μ_i , the trace variable binder, is due to Buring (2004).³ It will be supplied with a semantics in the next subsection.

This can be represented schematically as follows:

$$(19) \quad \text{Quantifier Raising and Binding} \\ \llbracket \text{XP} [\text{DP } Q] [\text{XP} [\mu_i] [\text{XP} \dots t_i \dots \alpha_i \dots]] \rrbracket$$

The LF for (18) can be given as (20):



Below, the mother nodes in this tree are supplied with semantic representations built from the meanings of terminal node material, in particular, μ_3 and *have*.

2.2. SEMANTICS

The interpretation of the trace binder μ_i or the index i is usually given through the composition principle Predicate Abstraction (Heim and Kratzer 1998: 186), but I propose to give a direct definition, (21), where f is a variable assignment and ϕ is a function from variable assignments to sets of eventualities; since all contexts considered are extensional, I ignore the world index.

$$(21) \quad \llbracket \mu_i \rrbracket^f = \lambda\phi \lambda z \phi^f [i \rightarrow z]$$

³ In Reinhart's (1983) original formulation, Q's sister is prefixed by λ_i ; Heim and Kratzer (1998) adjoin to Q's sister the numerical index i , to be interpreted as λx_i by the composition principle Predicate Abstraction. Predicate Abstraction, and μ_i , are also used for relativisation.

The sister to μ_i will probably not denote a function from variable assignments to sets of eventualities but a set of eventualities simpliciter; then I assume that a composition principle parallel to Intensional Functional Application (Heim and Kratzer 1998: 308) causes $\llbracket \mu_i \rrbracket^f$ to apply to the abstraction over f . $f[i \rightarrow z]$ is equal to f except for assigning z to i . So μ_i transforms a function from variable assignments to sets of eventualities to a function from individuals to such sets, where the individual stands in for the value of the variable assignment at i .

I propose the following semantics for *have*; s is here the type of states:

$$(22) \quad \llbracket have \rrbracket^f = \lambda\phi_{(st)}\lambda x \phi$$

What *have* does is map a set of states to a function mapping an individual to a set of states – the same as the first argument. The meaning is constant with respect to variable assignments. The variable x is chosen freely. In (23), the LF terminal node material is retained but the mother node material consists in semantic representations:⁴

$$(23) \quad \lambda s (most\ cars)(\lambda z\ inthe\ front(engine(z))(s))$$

We see that when, as here, the subject binds some variable in the small clause, *have* contributes the necessary abstractor – indirectly, by absorbing the subject trace in the following sense: the meaning of *have* turns a set of states into that constant function from individuals to sets of states that assigns to any individual, in particular that denoted by the subject trace at the actual variable assignment (equivalently,

⁴ In the last step, λs must be able to “climb through” the subject quantifier; this can be done by assigning the latter a more complex type than $\langle\langle e,t \rangle, t \rangle$ or by a special composition rule.

the value of the actual variable assignment at the subject trace), the original set of states. The “real” abstraction takes place in the next merge – through the trace variable binder μ_3 introduced by Quantifier Raising (QR). QR is essential for the interpretation of binding, so the trace variable binder μ_3 will be there whenever the subject binds some variable in the SC. By absorbing the subject trace, *have* provides the subject with a semantic role. The Redundancy Problem is thus solved.

What happens if the matrix subject fails to bind something in the small clause? Then the whole matrix is redundant, because $\lambda z \phi$ is a constant function, and this can be held responsible for the negative facts illustrated in (14)–(16): if the matrix subject does not corefer with anything in the SC, the meaning of the whole reduces to the meaning of the complement alone. Thus the Pertinence Problem is solved too.

Let us next look at a case of a relational noun without a possessive.

(24) Most cars have the engine in the front.

I will assume that the compositional semantics for (24) is just like that for (18); the tree only differs from (23) in that the terminal node *their*₃ *engine* is replaced by *the engine* e_3 ; that is, the first merge is (25) and the rest is the same:⁵

(25)

$$\lambda s \text{ inthefront}(\text{engine}(f(3)))(s)$$

the engine e_3 *in the front*

Here the internal argument of the relational noun *engine* is assumed to be a zero anaphor, the bound variable e_3 at LF, $f(3)$ at the semantic representation level. Generally, the internal argument of a relational noun can play various roles. In connection with genitives, it is natural to take it to be a lambda bound variable (Vikner and Jensen 2002), $\lambda x \lambda y \text{ engine}(x)(y)$, but in other contexts, like (26), it is more natural to treat it as a free, or presupposed (discourse bound), variable, and in yet others, like (27), it would seem to act like an indefinite zero argument. But sometimes, the internal argument behaves like a bound variable pronoun, as in (28), and this seems to be the function it has in the *have* cases.

⁵ The noun *engine* is here treated not merely as relational, ($e(et)$), but as functional, (ee), and the definite article is disregarded (or taken to denote $\lambda f_{(ee)} f$). This is solely for simplicity; in the general case, the SC subject must be treated as a generalised quantifier, $((et)t)$.

- (26) The police opened fire on an angry crowd of mourners, killing a relative.
- (27) I finished right behind a grandmother with a huge cheering crowd.
- (28) Frieda brought a friend, and so did Sue.

That is, the bound variable role is the role a relational noun's argument plays when it satisfies the Pertinence criterion arising from *have* – if this criterion is satisfied otherwise, the matrix subject binding some other variable, the relational noun's internal argument can play another role; intersententially bound as in (29) or existentially closed as in (30):

- (29) Abraham thought that his servant Eliezer of Damascus would inherit him, but the Lord had an heir of his own seed in mind.
- (30) I have a grandmother on my hockey team and she is good!

2.3. TENSE, ASPECT, AND AGENCY

So far, only a nonfinite *have* has been under consideration; the tense encoded in the finite form is interpreted at a node above the subject in the trees above. Here, the set of states turns into a set of times – times temporally included in the states and, as the case may be, preceding or encompassing the speech time. This is aspectual and temporal interpretation in one step. Subsequently, a time adverb – which may be covert – closes off the clause.

Although *have* is inherently stative and thus atelic, it can be made, as it were, eventive and telic: *get* (as a full verb) has the sense of inchoative *have* and can be decomposed into *have* and BECOME (see, e.g., Harley 2004), also when the object is a small clause:

- (31) She had her hair wet.
- (32) She got her hair wet.

So above the subject mother node in the tree, for (32) there will be two nodes, one for BECOME and one for Tense (this time incorporating perfective aspect).

As mentioned in 1.2, the “attained state” interpretation attended to here is not the only interpretation of a *have* + SC sentence with a past participle predicate; a sentence like (33a) has (a causative reading and) an “affectee” sense coinciding with the verbal passive interpretation of (33b) beside the “attained state” sense corresponding to the adjectival passive interpretation of (33b).

- (33) a. She had her hair braided.
b. Her hair was braided.

The affectee reading is unambiguously brought out in (34).

- (34) A 21 year old dependent daughter, the alleged victim in a rape case, had her mental health records confiscated by investigators.

The above analysis can be made to carry over to this case by assuming that the participle does not denote a function from individuals to sets of target states (cf. Kratzer 2000) but a function from individuals to sets of events, the same as the verb stem; the disambiguating effect of the agent *by* phrase in (34) can be ascribed to the constraint that Agents presuppose events. In other words: (33a) is indeed a passive sentence, verbal or adjectival. The auxiliary is not *be* but *have*; in other languages, there may be a separate one for the verbal case.

3. Relational *have* sentences

Intuitively, all three sentences (35a–c) are synonymous. That the first two are synonymous follows from the analysis developed in the last section, but (35c) – on the relational reading, where the hair is mine – has not yet been analysed.

- (35) a. I had my hair wet.
b. My hair was wet.
c. I had wet hair.

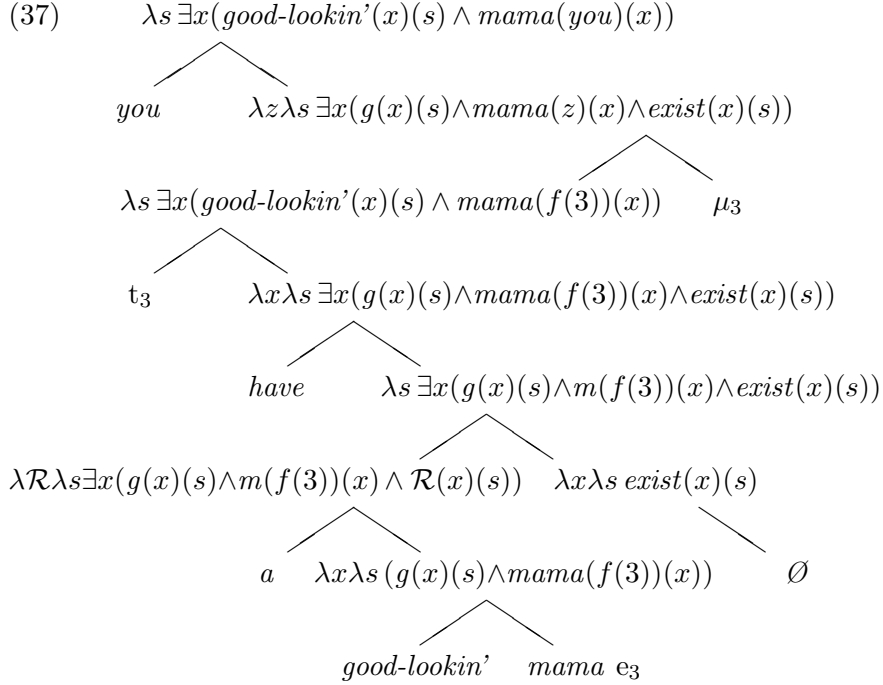
Sentences like (4)–(6) and (35c) are problematic on any account of *have* so far. A relational noun has its first argument saturated by the subject, and before it merges with *have*, it can combine with a modifier and an intersective determiner, forming a weak – indefinite or cardinal – DP. Strong DPs, however – definite or proportional-quantificational DPs, with nonintersective determiners – are out.

3.1. A ZERO PREDICATE

The analysis I will propose for these cases assimilates them to the cases treated in Section 2, like (35a), by positing an empty predicate merging with the DP, denoting the whole domain of individuals, or, to be exact, $\lambda x \lambda s \textit{exist}'(x)(s)$. Importantly, the source of this empty predicate is the unitary meaning of *have* defined in (22), forcing the complement to denote a set of states.

The interpretation of a sentence like (36) (up to aspect and tense) can be read off the below tree.⁶

(36) You have a good-lookin' mama.



Since *mama* is a functional noun so $\text{mama}(f(3))$ denotes a singleton if defined, the top level representation effectively reduces to $\lambda s \text{good-lookin}'(\text{ma}(f(3)))(s)$ (where ma is $\langle e, e \rangle$), the natural representation of *your mama good-lookin'*.

The definiteness effect, or the ban on strong DPs, is explained in the same way as on the analysis of *there be* sentences proposed by Barwise and Cooper (1981) or on the analysis of *have* sentences proposed by Landman and Partee (1987): nonintersective determiners make the sentences tautologous or contradictory.

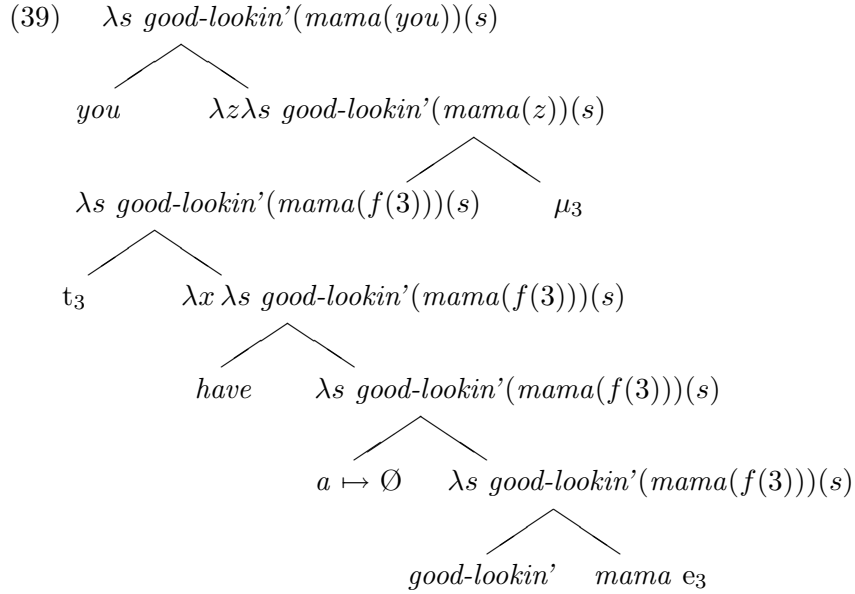
⁶ Note that the untraditional composition rule assumed in the first merge (corresponding to what Chung and Ladusaw (2003) call Restriction) and the untraditional determiner type assumed in the second merge are motivated solely by the need to project the state argument, independently of the primary concern here, the analysis of relational *have* sentences.

3.2. FUNCTIONS AND DEFINITENESS

Now there is another possible analysis of cases like (35c) and (36), where the relational noun is a functional noun, inspired by the use of bare singular count nouns in Norwegian or Swedish: When, as in (38a), there is no indefinite article, the noun is interpreted as a function whose argument is bound by the subject; when, as in (38b), there is an indefinite article, the noun is not interpreted as a function (or it is but its argument is not necessarily bound by the subject). From (38a), one can infer that the glass is the glass you have been drinking from, but for (38b) it is enough that there is an empty glass in front of you, in your hand, on your tray, or in your kitchen; in other words, (38b) is an ordinary possessive *have* sentence, like those treated in the next section.

- (38) a. Du har tomt glass.
 you have empty glass
 b. Du har et tomt glass.
 you have an empty glass

One way to account for these facts is to assume that the missing article signals definiteness on the part of the noun (by contrast, a definite article would signal definiteness on the part of the adjective–noun merge). Then, the noun has the type e (or $\langle\langle e, t \rangle, t \rangle$), and the adjective–noun merge denotes a set of states. Contrary to what is assumed for possessive sentences, there is then no room for a supplementary predicate – the SC interpretation is complete with the NP. This accounts for the need to interpret the noun *glass* in (38a) as relational – only that way can the *have* complement provide a variable to be bound by the subject – and relational here means functional due to the definiteness signalled by the missing determiner. Following this line of reasoning, one might consider substituting the below analysis of (36) for the one proposed above.



The noun *mama*, like *engine* in (23) and (25), is taken to denote a (*ee*) function, i.e., to be inherently functional and definite in the sense of Löbner (1998), and the indefinite article encountered in English is considered semantically vacuous. The same analysis would seem appropriate for constructions like (40).

(40) The lake has a depth of 39 ft.

This case would count as one among a range, some addressed by Bennis et al. (1998), where English has a “spurious” indefinite article.

4. Possessive *have* sentences

Often when *have* seems to embed a DP, this DP fails to provide a variable to be bound by the subject; it may fail to provide a variable altogether, in which case it does not contain a relational noun, or it may provide a variable bound in a different way, e.g. intersententially, as in (42) or (43), as opposed to (41), where the same relational noun is indeed bound by the subject:

- (41) It is difficult to convict someone for a crime which has no witnesses.
- (42) The defense counsel has the majority of witnesses.
- (43) The police thought they had all the suspects.

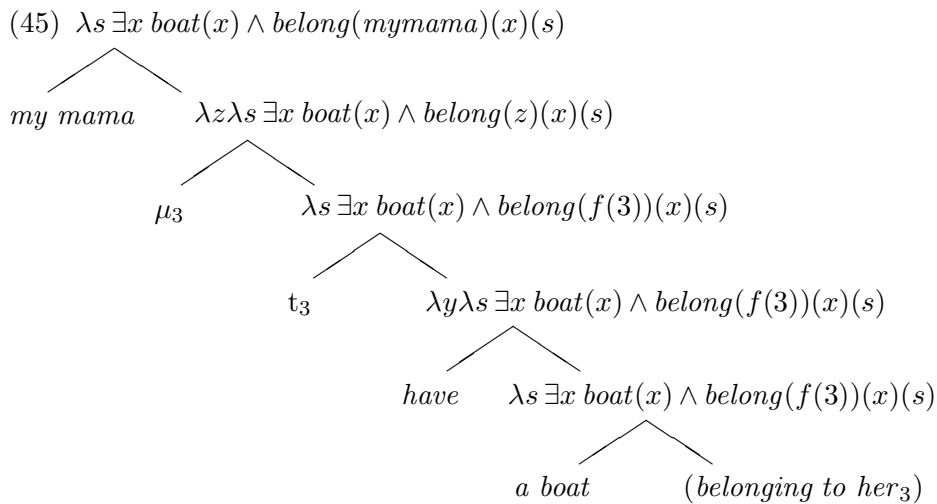
(42) and (43) are possessive *have* sentences with (Partee 1999) the “true verb”. For the small-clause-case-based abstraction analysis to carry over to these cases, a suitable variable must be identified in the silent predicate of the clause.

4.1. A SILENT POSSESSIVE PREDICATE

When a counsel has the majority of witnesses, she has them at her command. And when the police “have” all the suspects, they have them in their custody. 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. These PPs are contextual specifications of a silent predicate, and the total spectrum of them probably forms a prototype structure; what all have in common is a variable bound by the *have* subject.⁷

A sentence like (44) might be assigned the below analysis.

(44) My mama has a boat.



What this suggests is that always when *have* seems to embed a DP which does not contain a variable bound by the subject, the DP is implicitly supplemented by a predicate containing such a variable and specifying a notion of possession; this way, *have* really embeds a clause and can retain its abstractor role.

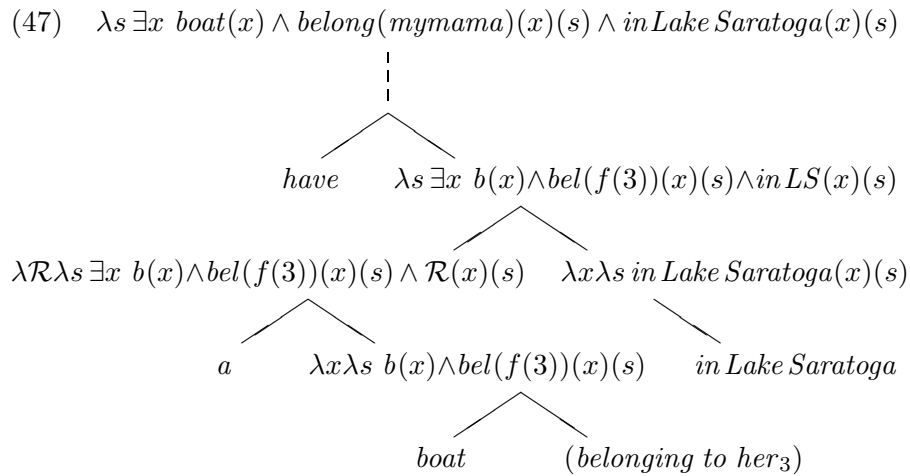
⁷ This spectrum parallels the spectrum of possessive relations discussed by Heine (1997). Note, however, that in the present context the variation is not in the sense of *have* but in the sense of a silent predicate.

4.2. A SILENT POSSESSIVE MODIFIER

However, there is reason to believe that the relevant variable can also be located in a silent adnominal modifier, as suggested in connection with (13) in 1.2 (on the ‘spymaster’ reading); consider (46), where it is reasonable to assume that the PP is predicative but not that it contains a variable bound by the subject.

(46) My mama has a boat in Lake Saratoga.

What seems to be tacitly understood here is a phrase *belonging to her*, modifying the noun *boat*, as illustrated below. Cases like (44) might then also be analysed in terms of a silent adnominal modifier, plus a vacuous predicate, in analogy with the relational cases discussed above.



One advantage of the analysis of *have* + DP developed in this section and the last is that it is uniform whether the DP provides a bound variable (‘relational’ *have*) or not (‘possessive’ *have*). In both cases, the DP is semantically supplemented by a silent predicate; in the former case, this predicate can be vacuous, as the requirement for a bound variable is ‘already’ met, but in the latter case, the bound variable must be provided by this predicate (or a silent modifier), so it (or the modifier) must contain some relation. In theory, this can be any relation, but in practice it is a situational specification of a range of relatively unmarked relations, the default being a possessive or a partitive relation.⁸

⁸ There is an obvious parallel to the genitive here: while the present analysis is compatible with an ambiguity analysis of the genitive, as offered by Barker (1995), in spirit it is more closely akin to a unified analysis, as proposed by Vikner and Jensen (2002), Partee and Borschev (1998), or, differently, Partee and Borschev (2003).

Thus the argument given by Partee (1997: 469) against an ambiguity analysis, the conjoinability of the two cases, as illustrated in (48), argues for this analysis; *has* is invariant but the silent predicates are ‘in his possession’ and ‘existing’.

(48) John has piles of money and no living relatives.

5. Comitative Adjuncts

Several linguists, inter alia, van Riemsdijk (1978) and Fabricius-Hansen (2006), have observed that the preposition *with* (along with Dutch *met*, French *avec*, German *mit*, or Scandinavian *med*) often appears to apply to a small clause. Such *with* phrases can function as depictive adjuncts, as in (49) and (50), or as nominal modifiers, as in (51) and (52).

(49) Do guinea pigs sleep with their eyes open or closed?

(50) You can put it in a cold oven with a towel over it and a pan of hot water below to assist rising.

(51) Iris is usually portrayed as a young maiden with wings on her shoulders.

(52) Water with no salt in it evaporates faster.

It has often been noted that non-instrumental *with* is closely related to *have*, so in the light of the previous sections it is not surprising that the parallel extends to these cases. (53) would be a good answer to (49):

(53) My piggies most of the time have their eyes open when they sleep.

Recall from Section 2 that *have* is assumed to “absorb” the trace of the QRed subject, by assigning to the SC denotation σ that function from individuals x that maps x back onto σ . This function brings us back to square one, the SC denotation. Then, however, the variable binder introduced by QR, μ_i , binds whatever the subject DP is coindexed with. Thus Predicate Abstraction, the interpretation of μ_i , is what supplies the subject with a role, and the fact that this is vacuous so that the subject is superfluous unless it binds a variable “in the SC” arguably accounts for the negative facts showing that it must bind a variable there (the Pertinence criterion).

5.1. NOMINAL ADJUNCTS

Now QR is one way of triggering Predicate Abstraction, Relativisation is another. I would like to suggest that (non-instrumental) *with* only differs from *have* in what subject it allows: a silent relative pronoun, which

- is identified with μ_i and undergoes Relative Raising (RR),
- adjoining to a dominating node and
- leaving a trace t_i .

This can be represented schematically as follows:

$$(54) \quad \text{Relative Raising and Binding (PP case)} \\ \text{[PP [DP } \mu_i \text{] [PP [DP } t_i \text{] [PP } \dots \alpha_i \dots \text{]]]}$$

Relative PPs are not commonly thought to involve a (subject) relative pronoun. Still, it would seem that any relative PP with a bound variable in it needs one, if the variable is not bound by a disjoint DP; the silent relative pronoun will provide the binder. On the other hand, it is not easy to find clear examples of such relative PPs with other prepositions than *with* or *without*; consider (55):

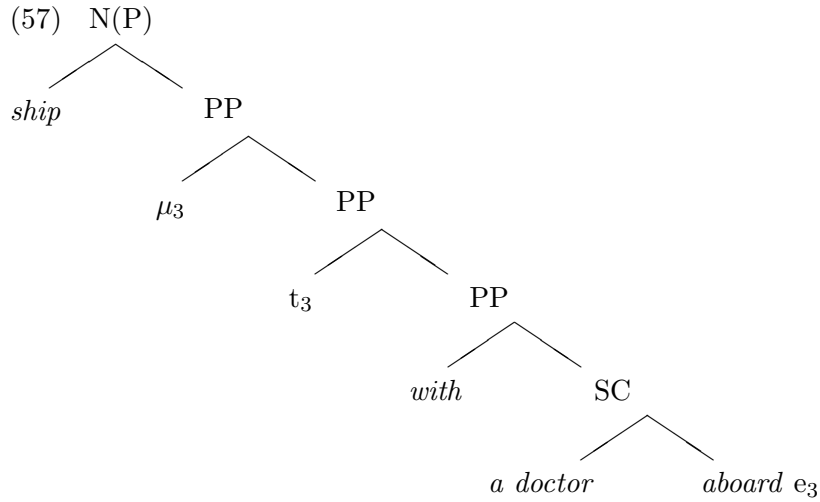
$$(55) \quad \text{A princess on her white horse came along and rescued me.}$$

Informants tend to prefer some other locution, such as substituting the indefinite article for the possessive pronoun, inserting a participle to the left of the PP, or moving it to the right to make it a depictive. Anyway, *with* PPs with SC complements with bound variable pronouns, like (51) and (52), abound, necessitating a silent subject relative pronoun, μ_i .

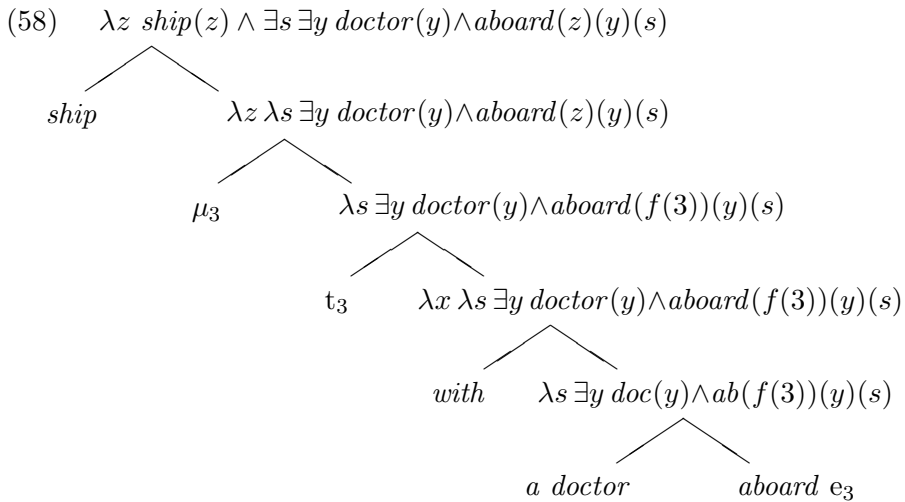
Consider the N(P) (56).

$$(56) \quad \text{ship with a doctor aboard}$$

Its LF can be given as (57):



Semantically, there is a question of how to treat the state argument (s) coming from the SC when it reaches the merge with the noun *ship*, in such a way that this merge can be interpreted as Intersection. One option is to say that the noun, too, has a state argument, denoting a relation between individuals and states. Another is to assume that the state argument gets closed off by a covert tense and/or time adverb normally coreferring with the tense or time adverb of the greater clause. Here I choose the simplistic solution of implicitly closing off the state argument existentially in the last merge:



Unless the silent relative pronoun binds a variable, the *with* phrase will fail to restrict the noun; in (59), the N(P) “boy with the sky clear” will either denote the set of all boys (if the sky is in fact clear) or the empty set (otherwise), and either way, this is a neurotic content.

(59) #A boy with the sky clear was standing in the clearing.

5.2. VERBAL AND FREE ADJUNCTS

According to Pylkkänen (2008) and Rothstein (2003), phrases serving to form depictives denote relations between individuals and (events or) states. Thus, SC embedding *with* PPs used as depictives, as in (49), (50), or (60), can be assumed to utilise the same semantic format as those used as relatives, viz., the individual–state relation resulting from merging the silent subject relative pronoun with the SC.

(60) The Comet swept down upon us with all her sails set.

Pylkkänen (2008) adjoins phrases denoting individual–state relations to nodes denoting individual–event relations (that is, to Voice’ in the subject-oriented case and to V in the object-oriented case) by way of a covert functor DEP: $\llbracket \text{DEP} \rrbracket = \lambda f_{(e(st))} \lambda x \lambda e \exists s e \subseteq s \wedge f(x)(s)$.⁹ Thus if the PP in (60) – with the silent relative pronoun μ_i and its trace – denotes the relation $\lambda z \lambda s \text{all}(\text{sails}(z))(\lambda x \text{set}(x)(s))$, then the depictive adjunct denotes the relation $\lambda x \lambda e \exists s e \subseteq s \wedge \text{all}(\text{sails}(x))(\lambda y \text{set}(y)(s))$, and this intersects with the individual–event relation denoted by the Voice’ constituent to form the relation $\lambda x \lambda e \text{sweep-down-upon-us}(e) \wedge \text{Agent}(x)(e) \wedge \exists s e \subseteq s \wedge \text{all}(\text{sails}(x))(\lambda y \text{set}(y)(s))$. This reduces to the set of events $\lambda e \dots \exists s e \subseteq s \wedge \text{all}(\text{sails}(c))(\lambda y \text{set}(y)(s))$ where *c* is the Comet, to serve as argument for aspect, tense, and (a here implicit) time adverb.

In the depictive case it is less clear than in the adnominal case what forces a bound variable in the SC; the absence of one does not result in redundancy but merely in a loss of orientation (subject vs. object). In fact, the Pertinence criterion does seem less rigorous here, cf. (61).

(61) We came back to Vermont with the leaves still on the trees.

This is especially apparent in the cases studied by Stump (1985: 270ff.): sentence–initial “augmented absolute” adjuncts which may or may not serve to restrict the domain of a modal or an adverb of quantification, in much the same way as *if* or *when* clauses; in (62), the adjunct forms a counterfactual antecedent, in (63), it acts more like a causal clause.

⁹ Here $e \subseteq s$ is short for $\tau(e) \subseteq \tau(s)$, i.e., *e* is temporally included in *s*.

- (62) With the sea just a little rougher, we would have capsized.
 (63) With the rain as heavy as it was, we had to rely on the radar.

It is difficult to detect here that anything in the adjunct – other than a location or situation – depends on anything in the matrix; indeed, these adjuncts are not used as depictives but rather as sentence adverbials, adjoining to the matrix above the Voice phrase, so a covariance with a matrix participant is less easy to describe than in a case like (60). This casts doubt on the generality of the view that non-instrumental *with* effectively means abstraction over an individual variable.

Stump (1985) brought to light an interesting contrast between *with* augmented absolutes and *having* free adjuncts in the sentence – initial, putatively domain – restricting function: the latter resist this function.

- (64) a. With the wind in our faces we wouldn't have made it.
 b. ?Having the wind in our faces, we wouldn't have made it.
 c. Having the wind in our faces, the dust didn't trouble us.

While (64a) resembles (62) closely, (64b) is odd because the counterfactual still lacks an antecedent (which must be cotextually inferred); as shown by (64c), however, the *having* adjunct can be stage – level and fill the same function as the *with* adjunct in (63). I have no explanation for this contrast; I can account for the parallel between *have* and *with*, but not for the differences.

5.3. RELATIONAL AND POSSESSIVE COMITATIVES

Like *have*, (non-instrumental) *with* often seems to embed a DP, and it is reasonable to assume that the analysis proposed in Section 3 and Section 4 carries over to these cases: the overt complement is covertly supplemented by a predicate. I seize the opportunity to exemplify this not with *with* but with *without* – cf. (65) and (66). If the DP has a relational noun supplying a bound variable, as in (65), the covertly supplemented predicate can be trivial ('without there being a winner'), otherwise, it will convey some possessive relation to a bound variable, as in (66) (say, 'without a passport on her').

Intuitively, *without* is *with* + a negation – and this intuition can be straightforwardly accounted for on the hypothesis that the preposition semantically embeds a set of states; *with* returns (a function from x to) the same set, but *without* returns (a function from x to) its complement: for (65), $\lambda s \neg \exists x \text{winner}(f(3))(x) \wedge \text{exist}(x)(s)$.

- (65) Eventually, the game ended without a winner.
 (66) She was arrested for entering the country without a passport.

6. The Genesis of the *have* Perfect

The origin of the *have* perfect in Romance and Germanic is a long-standing and much-debated issue (see de Acosta (2006) for a review of the relevant literature). It is of course desirable to derive the auxiliary *have* from the other uses of *have*, and most scholars have taken Latin *habeo* as a transitive verb denoting possession as their point of departure. However, de Acosta (2006), following on work by, i.a., Vincent (1982), shows that the construction where *habeo* embeds a perfect participle small clause antedates the perfect and argues that this construction constitutes its basis.¹⁰ Indeed, the analysis of *have* + SC developed in Section 2 can be shown to hold a key to understanding the development.

The extra tool needed to see how the semantics of the perfect can be derived from the semantics of the *have* + SC construction with a perfect participle predicate is a formal analysis of perfect participles in terms of events and their resultant or target states, as proposed by Kratzer (2000).

6.1. FROM STATES TO AGENTS VIA CAUSING EVENTS

Let us focus on (67), for the moment shutting out the perfect tense reading:

- (67) Maria hat die Tür geschlossen. (German)
 Mary has the door closed
 ‘Mary has the door closed / Mary has closed the door.’

To satisfy the need for the subject of *hat* to bind a variable, it is necessary to interpret *die Tür* ‘the door’ as ‘the door to her room’ or something similar, i.e. to locate the relevant variable in a silent adnominal modifier, as suggested in connection with (13) in Section 1.2.2 (on the ‘spymaster’ reading).

According to Kratzer (2000), the verb stem *schliess* ‘close’ denotes a function from entities to relations between, in Parsons’ term, ‘target states’ and events, so *die Tür schliess* ‘close the door’ denotes (68):

- (68) $\lambda s \lambda e \text{ close}(e) \wedge \text{closed}(\text{the door})(s) \wedge \text{cause}(s)(e)$

The ‘stativiser’ (69), expressed as past participle morphology, then yields (70) for *die Tür geschlossen* ‘the door closed’:¹¹

¹⁰ I am much indebted to Dag Haug for bringing this approach to my attention.

¹¹ This is the ‘phrasal’ case; in the ‘lexical’ case, the stem will combine with the stativizer before combining with the object (Kratzer 2000: 7f.).

$$(69) \quad \llbracket \text{STATIVISER} \rrbracket = \lambda R \lambda s \exists e R(s)(e)$$

$$(70) \quad \lambda s \exists e \text{ close}(e) \wedge \text{closed}(\text{the door})(s) \wedge \text{cause}(s)(e)$$

This is a set of states, for the stem *hab* ‘have’ and *Maria* to transform to (71), where a bound variable is interpreted in:

$$(71) \quad \begin{aligned} \lambda z \lambda s \exists e [\text{close}(e) \wedge \text{closed}(\text{the door}(z))(s) \wedge \text{cause}(s)(e)] (\mathbf{m}) \\ = \lambda s \exists e \text{ close}(e) \wedge \text{closed}(\text{the door}(\mathbf{m}))(s) \wedge \text{cause}(s)(e) \end{aligned}$$

Now crucially, (70) is not just a set of states but a set of states *s* such that there is an event *e* such that *s* is its target state; thus there is in theory an alternative way of interpreting in a bound variable *z*, namely, as the agent of the event, resulting in a set of states *s* such that there is an event *e* such that *s* is its target state and *z*, and ultimately *m*, is its agent. This coincides with the semantics of the so-called perfect of result (McCawley 1971): Combined with the present, (72) will say that there is a present state resulting from an event of *m* closing the door; i.e., the other, perfect tense reading of (67).

$$(72) \quad \lambda s \exists e \text{ close}(e) \wedge \text{closed}(\text{door})(s) \wedge \text{agent}(e)(\mathbf{m}) \wedge \text{cause}(s)(e)$$

6.2. FROM STATES TO AGENTS VIA PRIOR EVENTS

Not all verbs are causative, and the perfect is not always a perfect of result; so the generalised interpretation scheme (73) is not sufficiently general yet (by *evented* is meant the perfect participle of the transitive pro-verb *event*; *entity* is a convenient shorthand for its object).

$$(73) \quad \begin{aligned} \lambda s \exists e \text{ event}(e) \wedge \text{evented}(\text{entity})(s) \\ \wedge \text{agent}(e)(\mathbf{c}) \wedge \text{cause}(s)(e) \end{aligned}$$

But according to Kratzer, statives can also be built from transitives that have only, in Parsons’ term, a ‘resultant state’, like *das Brot essen* ‘eat the bread’ or *das Buch lesen* ‘read the book’. The general format including a visible agent is then (74), where a time variable *t* is substituted for the state variable *s*.

$$(74) \quad \lambda t \exists e \text{ event}(\text{entity})(e) \wedge \text{agent}(e)(\mathbf{c}) \wedge \tau(e) < t$$

According to Parsons (1990: 234), any culminating event has a resultant state. Still more generally, any event has a time succeeding its runtime. Thus the stativiser (69) can be generalised to the stativiser (75).

$$(75) \quad \llbracket \text{STATIVISER}_1 \rrbracket = \lambda E \lambda t \exists e E(e) \wedge \tau(e) < t$$

If now (76) has a meaning coinciding with (77), it is reasonable to assume that (78) has a meaning coinciding with (79) and that (80) has a meaning coinciding with (81):

- (76) Maria hat den Fisch gekocht.
 Mary has the fish cooked
 ‘Mary has cooked the fish.’
- (77) $\exists t \exists e \text{ cook}(\text{the fish})(e) \wedge \text{agent}(e)(\mathbf{m}) \wedge \tau(e) < t \wedge \text{now} \subseteq t$
- (78) Maria hat gegessen. ‘Mary has eaten.’
- (79) $\exists t \exists e \text{ eat}(e) \wedge \text{agent}(e)(\mathbf{m}) \wedge \tau(e) < t \wedge \text{now} \subseteq t$
- (80) Maria hat ein Reh gesehen.
 Mary has a roe seen
 ‘Mary has seen a roe deer.’
- (81) $\exists t \exists e \text{ see}(\text{a roe})(e) \wedge \text{experiencer}(e)(\mathbf{m}) \wedge \tau(e) < t \wedge \text{now} \subseteq t$

That is, once the causative pattern exemplified by (73) above is established, it is easy and natural to extend it to other types of verbs (not causative or even agentive) and other uses of the perfect (‘experiential’ or ‘immediate past’); the crucial element is the condition $\text{cause}(s)(e)$ or $\tau(e) < t$, and the crucial move to get there from the stative *have* + SC construction is the introduction of the subject role of *e*.

This move, introducing the subject role of an event into a stative structure, is illicit in the English paraphrase (82a), where the DP precedes the participle.

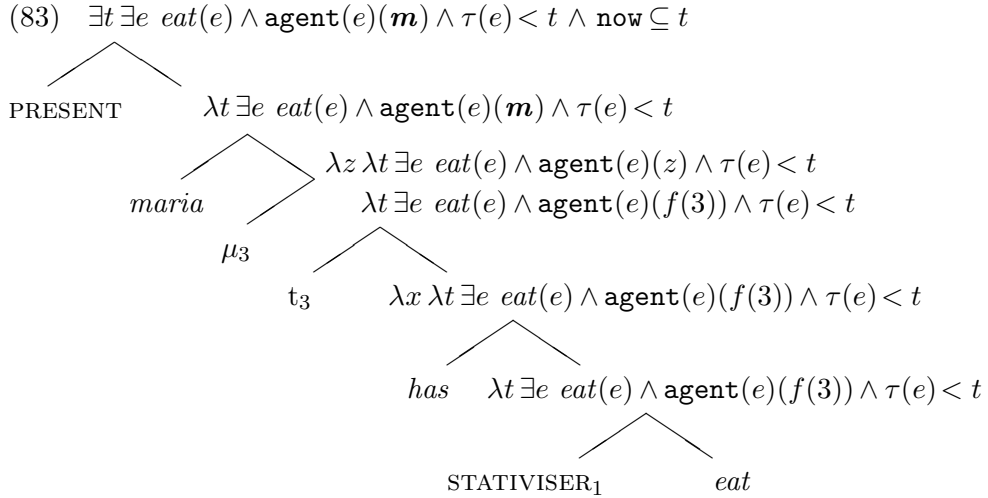
- (82) a. She has the door closed.
 b. She has closed the door.

And to be sure, the perfect is the result of a process of reinterpretation **and** grammaticalisation. Nevertheless, it seems a reasonable conjecture that what triggered the process was the introduction of the agent of the event causing the state as an alternative way of satisfying the need for a bound variable.

Note that there is no direct connection between the agent role and the subject, or ‘external argument’, in this picture: As elsewhere, the subject of *have* lacks a role and needs *have* to open an argument slot for it; the agent role emerges from a reinterpretation of the set of states that *have* takes as its argument, ex hypothesi because that is one way of providing a bound variable.

At some point in history, the interpretation of a sentence corresponding to (78) may have proceeded according to (mutatis mutandis) (83):¹²

¹² The agent is here “interpreted in”; it could also be present in the stativiser.



(83) could even be a tree for today, for it gives us the meaning of the perfect as an indefinite past. The analysis is in the spirit of e.g. Musan (2003), insofar as the anteriority information conveyed by the perfect is located in the participle. Many other issues discussed in the large literature on the perfect will, however, have to be left open here; see, e.g., Alexiadou, Rathert, and von Stechow (eds.) (2003) for an overview and a representative selection of viewpoints.

There are three advantages to assuming that (83) is at the base of today's *have* perfect in Germanic and Romance. For one thing, it is *prima facie* desirable to do without reanalysis, and beyond the assumption that the agent is introduced as a bound variable, next to nothing in the way of reanalysis need be assumed. In addition, we get:

- **A solution to the present perfect puzzle**¹³ The fact that the present perfect cannot combine with definite past time adverbials in languages like Danish, English, and Spanish is explained: since past reference is implicit in the stativiser, acting as an aspect, i.e. relating events to times, there is no site where such adverbials could meaningfully attach. Specifically, a definite past time adverbial could only adjoin to a node denoting a set of times, but then it would have to adjoin above the stativiser, and that would conflict with the present and force a past perfect. (Needless to say, several related problems are not solved by this analysis, notably why the present perfect can combine with “improper” past time adverbials (denoting an “extended now” (cf. McCoard 1978) like *today*.)

¹³ See Klein (1992), and Schaden (to appear) for a review of the recent literature.

- **An account of auxiliary selection**¹⁴ The division of labour between *be* and *have* in languages like Danish, French, and German, in particular, the fact that unaccusatives select *be*, is explained: when the verb is unaccusative, the subject is not an external agent but its internal argument and therefore cannot consist in a covert variable for the *have* subject to bind. Specifically, a German sentence like *er hat gestorben* (he has died) could only be interpretable with a bound variable in the internal argument position: $[er [\mu_3 [t_3 [[STATIVISER [e_3 \textit{sterb}]] \textit{hat}]]]]$. This variable might be conceived of as a trace, but that would eventually cause a type conflict. The copula, however, is the perfect choice for an auxiliary: $[er [\mu_3 [[STATIVISER [t_3 \textit{sterb}]] \textit{ist}]]]$.

There are thus strong reasons for assuming the same analysis for the *have* perfect as for the “attained state” *have* construction, the only reinterpretation required being the reemergence of the agent in the target state description. Needless to say, however, this hypothesis must yet be tested through thorough diachronic investigations.

7. Outlook and Conclusions

According to the analysis in Sections 2 to 4, the verb *have* consistently operates on a “small clause” and makes it possible and necessary for the matrix subject to bind a variable in the small clause argument or predicate, building a property by exploiting the variable binder introduced by Quantifier Raising.

This provides a uniform treatment of *have*, the relational and the possessive *have* emerging as two special cases where the small clause predicate appears empty. The uniform treatment of *with* in Section 5 is similar: again, a property is built, only this time by means of the variable binder introduced by Relative Raising. In a nutshell, the analysis of the verb *have* and the preposition *with* consists in a compositional interpretation of pertinence in terms of variable binding.

It may not be immediately evident that *have* and *with* should have this highly formal and abstract meaning. But note that this verb and this preposition are only two bits of a bigger picture of pertinence expressions across languages. In fact, Hole (2005) proposes an analysis of the German “possessor” dative (also called the dative of pertinence), as in (84), in terms of an Aff(ectee) voice head inducing abstraction (“dative binding”), thus making it possible and necessary for the dative argument (in the Spec of Aff) to bind a variable in the VP.

¹⁴ See Bentley and Eythórsson (2004) for a recent discussion.

- (84) Dem liegen fast vier Pfund im Magen.
 that-DAT lie almost four pounds in-DEF stomach
 ‘He has almost four pounds (lying) in his stomach.’

The variables targeted by this binding seem to be restricted to covert variables, primarily internal arguments of relational nouns.¹⁵ On the other hand, the VP need not denote a set of states but can denote a set of events as well, as in (85). In passives, the dative corresponds to the dynamic, “affectee” *have* or *get* with a perfect participle, *bekommen* in German, mentioned in 1.2 and 2.3; cf. (86).

- (85) Dem ist vor einiger Zeit der Arm abgefahren worden.
 that-DAT is fore some time the arm offdriven become
 ‘He’s recently had / got his arm cut off by a car.’
- (86) Der hat vor einiger Zeit den Arm abgefahren bekommen.
 that has fore some time the arm offdriven got
 ‘He’s recently had / got his arm cut off by a car.’

To be sure, there is more to be said about the dative of possession; there is the intuition that in addition to binding the internal argument of a relational noun, the dative DP is “affected” by the eventuality, as indicated by the fact that (87) implies that Ede has his shoes on. Hole (2005) accounts for this intuition by assuming an Affectee relation over and above the abstractor.

- (87) Dem Ede bröselt der Schnee in die Schuhe.
 the-DAT Ede crumbles the snow in the shoes
 ‘Snow crumbles into Ede’s shoes.’

Second, the dative of possession borders on (obligatory) dative arguments on one side and on the “bene-/maleficiary” dative (dativus (in)commodi) on another, and the boundaries are not sharp.¹⁶

The German dative of pertinence may have a relatively restricted distribution, reflecting a stricter, or richer, notion of pertinence than mere variable binding. By contrast, as (88)–(91) serve to suggest, the Russian (genitive) preposition *u* seems to have, *mutatis mutandis*, roughly the same distribution as *have*:¹⁷

¹⁵ But in nonstandard varieties of German, “dative binding” can target possessive pronouns; it is difficult, though, to delimit this use from the “beneficiary/maleficiary” dative.

¹⁶ But note that Hole (2005) has a theory about the dativus (in)commodi as well: the dative argument binds an argument in an implicit purposive predication.

¹⁷ Roughly; but note that the *u* argument can only marginally bind a reflexive.

- (88) U nee mashina.
 P her car
 ‘She has a car.’
- (89) U nee dve sestry.
 P her two sisters
 ‘She has two sisters.’
- (90) U nee oba syna v armii.
 P her both sons in army
 ‘She has both her sons in the army.’
- (91) U nee volosy nakrucheny.
 P her hairs twined
 ‘She has her hair braided.’

The parallel extends to the development of a perfect tense; in North Russian, the *u* construction with a *-no/-to* participle has acquired a perfect tense reading (Kuteva and Heine 2004). This shows that the reemergence of the agent in a target state description, assumed in Section 6, is not an isolated phenomenon.

Given this correspondence, the semantics of *u* can be described as the mirror image of the semantics of *have* defined in Section 2.2; the only difference would reside in the order of the two arguments; in effect, *u* will first consume the complement DP trace variable and then map the set of states onto itself:

$$(92) \quad \llbracket u \rrbracket^f = \lambda x \lambda \phi_{(st)} \phi$$

In this light, the interpretation of possession (in a wide sense) as pertinence qua variable binding appears as less ad hoc than if it were to apply to *have*, *get*, and *with* exclusively. Basically, possessive predicates are interpreted as a species of “semantic glue”, steering composition along and enabling as well as enforcing binding relations in interaction with general mechanisms like QR and economy (avoid redundancy).

This may still seem meagre. However, from the need to identify a bound variable in the scope of the possessive predicate even when no variables, overt or covert, are anchored in the semantics, shades and nuances of additional meaning arise. Under this pressure, as sketched in 1.2.2, 3.2, 4.1, and 4.2, a range of pragmatically inferred relations come into play; sortal nouns may be coerced to somehow relational nouns, or, a relation of possession in a narrower sense, or containment, or at the very least some connection to the described situation is inferred, embellishing the intrinsic skeletal semantics.

Acknowledgements

I owe a great debt to the participants at the Bråtan SPRIK workshop in September 2006 and to the audiences at presentations in Düsseldorf and Frankfurt in December 2006, especially to Sebastian Löbner, Magdalena Schwager, and Ede Zimmermann.

References

- de Acosta, D. (2006). HAVE + PERFECT PARTICIPLE in *Romance and English: Synchrony and Diachrony*. PhD dissertation, Cornell University.
- Alexiadou, A., Rathert, M. & von Stechow, A. (Eds.) (2003). *Perfect Explorations*. Berlin: Mouton de Gruyter.
- Barker, C. (1995). *Possessive Descriptions*. Stanford: CSLI Publications.
- Bennis, H. et al. (1998). Predication in Nominal Phrases. *Journal of Comparative Germanic Linguistics*, **1**, 85–117.
- Bentley, D. & Eythórsson, Th. (2004). Auxiliary selection and the semantics of unaccusativity. *Lingua*, **114**, 447–471.
- Büring, D. (2004). Crossover Situations. *Natural Language Semantics*, **12**, 23–62.
- Chung, S. & Ladusaw, W. (2003). *Restriction and Saturation*. Cambridge, MA.: MIT Press.
- Fabricius-Hansen, C. (2006). Big Events and Small Clauses. *Sinn und Bedeutung* 11, Barcelona: Universitat Pompeu Fabra.
- Freeze, R. (1992). Existentials and other locatives. *Language*, **68**, 553–595.
- Gutiérrez-Rexach, J. (2007). Beyond the (In)Definiteness Restriction: A Unified Semantics for *have*. In E. Puig-Waldmüller (Ed.), *Proceedings of Sinn und Bedeutung 11* (pp. 291–304). Barcelona: Universitat Pompeu Fabra.
- Harley, H. (2004). Wanting, Having, and Getting: A Note on Fodor and Lepore 1998. *Linguistic Inquiry*, **35**, 255–267.
- Heim, I. (1998). Anaphora and Semantic Interpretation: A Reinterpretation of Reinhart’s Approach. In U. Sauerland & O. Percus (Eds.), *The Interpretive Tract* (= MITWPL **25**), 205–246.
- Heim, I. & Kratzer, A. (1998). *Semantics in Generative Grammar*. Oxford: Blackwell.
- Heine, B. (1997). *Possession: Cognitive Sources, Forces, and Grammaticalization*. Cambridge: Cambridge University Press.
- Hole, D. (2005). Reconciling “possessor” datives and “beneficiary” datives – towards a unified voice account of dative binding in German. In C. Maienborn & A. Wöllstein (Eds.), *Event Arguments: Foundations and Applications* (pp. 205–246). Tübingen: Niemeyer.
- Iatridou, S. (1996). To Have and Have not: on the Deconstruction Approach. *Proceedings of WCCFL XIV* (pp. 185–201). Stanford: CSLI.
- Jensen, P. Anker & Vikner, C. (1996). The double nature of the verb *have*. *LAMBDA*, **21**, 25–37, Department of Computational Linguistics, Copenhagen Business School.
- Klein, W. (1992). The Present Perfect Puzzle. *Language*, **68**, 525–552.
- Kratzer, A. (2000). Building Statives. *Berkeley Linguistic Society* 26, Berkeley.
- Kuteva, T. & Heine, B. (2004). On the possessive perfect in North Russian. *Word*, **55**, 37–71.

- Landman, F. (2004). *Indefinites and the Type of Sets*. Oxford: Blackwell.
- Landman, F. & Partee, B. (1987). Weak NPs in HAVE sentences. Unpublished abstract. Amherst, MA: University of Massachusetts.
- Löbner, S. (1998). Definite Associative Anaphora. Paper at <http://user.phil-fak.uni-duesseldorf.de/~loebner/>.
- McCawley, J.D. (1971). Tense and Time Reference in English. In C. J. Fillmore & D. T. Langendoen (Eds.), *Studies in linguistic semantics* (pp. 96–113). New York: Holt, Rinehart and Winston.
- McCoard, R.W. (1978). *The English Perfect: Tense Choice and Pragmatic Inference*. Amsterdam: North-Holland.
- Montague, R. (1973). The proper treatment of quantification in ordinary English. In J. Hintikka et al. (Eds.), *Approaches to Natural Language* (pp. 221–242). Dordrecht: Reidel.
- Musan, R. (2003). *The German Perfect: Its Compositional Semantics and its Interaction with Temporal Adverbials*. Dordrecht: Kluwer.
- Parsons, T. (1990). *Events in the Semantics of English*. Cambridge, MA.: MIT Press.
- Partee, B. (1983/97). Uniformity vs. versatility: the genitive, a case study. Appendix to Theo Janssen (1997), “Compositionality”. In J. van Benthem & A. ter Meulen (Eds.), *The Handbook of Logic and Language* (pp. 464–470). New York: Elsevier.
- Partee, B. (1999). Weak NPs in HAVE sentences. In J. Gerbrandy et al. (Eds.), JFAK [a Liber Amicorum for Johan van Benthem on the occasion of his 50th Birthday], CD-Rom, Amsterdam: University of Amsterdam. Accessible at: <http://www.illc.uva.nl/j50/>.
- Partee, B. and V. Borschev. (1998). Integrating lexical and formal semantics: Genitives, relational nouns, and type-shifting. In R. Cooper & Th. Garmkrelidze (Eds.), *Proceedings of the 2nd Tbilisi Symposium on Language, Logic and Computation* (pp. 229–241). Tbilisi: Tbilisi State University.
- Partee, B. and V. Borschev. (2003). Genitives, relational nouns and argument-modifier ambiguity. In E. Lang, C. Maienborn & C. Fabricius-Hansen (Eds.), *Modifying Adjuncts* (pp. 67–112). Berlin: Mouton de Gruyter.
- Pykkänen, L. (2008). *Introducing Arguments*. Cambridge, MA.: MIT Press.
- Reinhart, T. (1983). *Anaphora and Semantic Interpretation*. Chicago: The University of Chicago Press.
- Riemsdijk, H. C. van. (1978). *A Case Study in Syntactic Markedness*. Dordrecht: Foris.
- Ritter, E. & Rosen, S. T. (1997). The function of *have*. *Lingua*, **101**, 295–321.
- Rothstein, S. (2003). Secondary predication and aspectual structure. In E. Lang, C. Maienborn & C. Fabricius-Hansen (Eds.), *Modifying Adjuncts* (pp. 553–590). Berlin: Mouton de Gruyter.
- Schaden, G. (to appear). Present Perfects Compete. To appear in *Linguistics and Philosophy*.
- Stump, G. (1985). *The Semantic Variability of Absolute Constructions*. Dordrecht: Reidel.
- Szabolcsi, A. (1994). The Noun Phrase. In F. Kiefer & K. É. Kiss (Eds.), *Syntax and Semantics 27: The Syntactic Structure of Hungarian* (pp. 179–275). New York: Academic Press.
- Tantos, A. (2006). Lexicon-Discourse Interactions: light *have*. *Sinn und Bedeutung* 11, Barcelona: Universitat Pompeu Fabra.
- Vikner, C. & Jensen, P. Anker. (2002). A semantic analysis of the English genitive. *Studia Linguistica*, **56**, 191–226.

Vincent, N. (1982). The Development of the Auxiliaries HABERE and ESSE in Romance. In N. Vincent & M. Harris (Eds.), *Studies in the Romance Verb* (pp. 71–96). London: Croom Helm.