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Item Type	Article
Authors	Partee, Barbara H.
Download date	2026-03-16 00:06:43
Link to Item	<a href="https://hdl.handle.net/20.500.14394/50073">https://hdl.handle.net/20.500.14394/50073</a>

## Copula Inversion Puzzles in English and Russian\*

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### 1. Puzzles

Controversies and puzzles concerning possible inversion around the copula in English copula might be illuminated by comparison with some aspects of the behavior of Russian copular sentences. The puzzles I am concerned with arise in the context of the phenomenon of connectivity in specificational pseudoclefts in English, whose challenging nature was made clear by Higgins (1973). The approach of Williams (1983), which was given a formal semantic analysis in Partee (1986), analyzes specificational copula sentences as an "inverted" form of predicational sentences, allowing *be* to be unambiguous and deriving the relevant ambiguity of copular sentences from the possibility of the precopular (surface subject) NP being either the "real" subject or the (moved) predicate; a similar proposal was made to account for different phenomena in Russian as early as Chvany (1975). Recent work by Heycock and Kroch (1998, in press) argues against inversion in English copular sentences.

In Russian, the distribution of instrumental and nominative case in copular sentences gives clear evidence of the existence of "inverted" copular sentences; this suggests that there might be evidence in Russian which could help to cast light on the situation in English, perhaps supporting the postulation of inversion in some English copular sentences, where the evidence is less straightforward.

In the end, I come to the conclusion that Russian and English are indeed quite different in this respect, and that the sort of inversion posited by Williams (1983) and Partee

\* For useful suggestions and discussion, I am grateful to Mark Baltin, Renee Blake, Wayles Browne, Catherine Chvany, Rose-Marie Déchaine, Eva Hajičová, Irene Heim, Roger Higgins, Richard Kayne, Elena Paducheva, Jarmila Panevová, Orin Percus, Petr Sgall, Yael Sharvit, Anna Szabolcsi, students in a seminar on categories and types at UMass in Fall 1997, and audiences at FASL7, at the UConn-UMass-MIT Workshop on Semantics at the University of Connecticut in October 1998, and at a colloquium at New York University in November 1998.

(1986) does not occur in English, although comparable inversion may very well occur in Russian. A second look at some of the puzzling properties of copular sentences explored by Higgins (1973) suggests that they may reflect interactions of syntactic, semantic, and pragmatic properties and distinctions, which different languages may, not surprisingly, carve up in different ways. No current analysis that I am aware of captures all of these phenomena fully satisfactorily, but some of the pieces of the puzzle are becoming less puzzling, and copular sentences continue to be an inviting domain for cross-linguistic studies in syntax, semantics and information structure.

### 1.1 *Connectivity and the predicational/specificational distinction*

Williams (1983) and Partee (1986), like many other authors, follow Higgins (1973) in holding that the difference between predicational and specificational pseudoclefts, illustrated by (1) and (2) respectively, should follow from and be accounted for in the same manner as the difference between predicational and specificational copular sentences more generally. Because specificational pseudoclefts show distinctive "connectivity" effects, the analysis of pseudoclefts plays an important role in the evaluation of proposals for the treatment of copular sentences. At the outset we review the predicational/specificational distinction (Akmajian 1970) and the criteria for it (Higgins 1973).

- (1) **Predicational pseudocleft:** What John is is a danger to him.

For instance, perhaps John is a bodyguard, and being a bodyguard is a danger to John; in other words, it is John's job or situation that is a danger. The predicate "is a danger to him" is predicated of the referent of the free relative *what John is*.

- (2) **Specificational pseudocleft:** What John is is a danger to himself.

The special semantic property of the specificational pseudocleft is that it is approximately synonymous (differing in ways that relate to information structure, uniqueness, and presupposition) with the simple sentence

- (3) John is a danger to himself.

So being a danger to himself is somehow predicated of John, not of the referent of the whole free relative as in the predicational pseudocleft. These sentences are called "specificational" because, as described by Higgins, they specify the "value" of the description given in the free relative. To analyze (2) on its own terms, rather than as a "transform of" or "reconstruction into" something like (3), it would seem that we should analyze (2) as some kind of *identity* sentence, perhaps asserting identity of properties: the property that is "what John is" is the property of being a danger to himself. (We discuss how to achieve that in Section 2.4.)

The special syntactic property of specificational pseudoclefts is the "connectivity" effects they exhibit. The distribution of reflexive and non-reflexive pronouns in specificational pseudoclefts is the same as that in their simple-sentence counterparts, as illustrated in (2) and

(3) above. This property of specificational pseudoclefts has presented a great challenge to explanation, since the overt configuration of the reflexive and its antecedent in the pseudocleft does not conform to the usually obligatory c-command environment for reflexivization. There are other connectivity effects in specificational pseudoclefts as well, including phenomena involving the licensing of negativity polarity items, and the government of case in languages like German, illustrated below with examples from Iatridou and Varlokosta (1998).

- (4) Was Hans essen wollte war einen Apfel.  
 what Hans eat wanted was an apple-ACC  
 'What Hans wanted to eat was an apple.' (specificational)
- (5) Was Hans essen wollte war ein Apfel.  
 what Hans eat wanted was an apple-NOM  
 'What Hans wanted to eat was an apple.' (predicational)

Here are further examples of predicational and specificational copular sentences; we turn below to criteria for distinguishing them.

**Predicational copular sentences:**

- (6) a. Helen is a teacher.  
 b. My best friend is tall.  
 c. Bill is my best friend.  
 d. What I'm giving to Sean is in the car.

**Specificational copular sentences:**

- (7) a. The only thing he eats is junk food.  
 b. The number of planets is nine. (Higgins 1973)  
 c. My best friend is Bill.  
 d. What I don't like about John is his tie. (Higgins 1973)

**Ambiguous pseudoclefts and ambiguous copular sentences:**

- (8) a. What John is is a danger to everyone.  
 b. What John is is unusual.  
 c. The owner is a friend of Bill's.  
 d. Bill's best friend is Mary's teacher.

*1.2. Distinguishing predicational and specificational pseudoclefts*

Following Higgins, connectivity effects are generally taken to be the clearest distinguishing criterion for specificational pseudoclefts, but of course not all sentences include the sorts of elements that would provide such evidence. Other criteria offered by Higgins include the following; some are limited to pseudoclefts, others apply to other copular sentences.

**Paraphrase tests:** The specificational pseudocleft is approximately paraphrased by its simple-sentence counterpart. The predicational pseudocleft has paraphrases that show that its free relative *wh*-clause has an ordinary "referential" meaning, and the post-copular constituent is predicating something of that referent. Higgins also points to the "list-like" quality of specificational sentences and offers the following paraphrase of a specificational pseudocleft like (2): 'John is the following: a danger to himself.'

**Raising and Subject-V inversion tests:** Only in predicational pseudoclefts can the *wh*-clause undergo certain transformations that are normal for subjects of sentences, such as subject-raising with *seem*, *appear*, *turn out* and subject-Aux inversion in questions.

- (9) a. Is what John is a danger to him?  
b. \*Is what John is a danger to himself?
- (10) a. What John is seems to be a danger to him.  
b. \*What John is seems to be a danger to himself.

We will return to these properties and their significance for analyses of copular sentences in Section 4. Here we note that Higgins showed that connectivity is not limited to pseudoclefts, and the existence of specificational copular sentences like those below precludes an account of connectivity by syntactically deriving pseudoclefts from their non-pseudoclefted counterparts.

- (11) a. The only thing that the missile damaged was itself.  
b. The only woman that no Englishman<sub>i</sub> will invite to dinner is his<sub>i</sub> mother.  
(Jacobson 1994)

Higgins posited a *be* of identity for specificational pseudoclefts (while distinguishing specificational copular sentences from Identity sentences; see Section 4) and a *be* of predication for predicational pseudoclefts. Williams (1983) and Partee (1986) offered an alternative account using a single *be*, plus some type-shifting, and with the possibility of inversion around *be*. These analyses, and subsequent discussion, form the background for the present work.

### 1.3. Copula inversion puzzles

The puzzles raised by copular sentences are interrelated and difficult to separate into discrete questions, but may be roughly divided into three families of questions about English copular sentences, plus a family of cross-linguistic questions.

- (12) In sentences of the form  $NP_1$  *be*  $NP_2$  in English, is there ever "inversion around *be*"? That is, is there ever evidence that  $NP_2$  is the "underlying subject"?

The answer is probably "yes" for Russian, and not only for *be*, but it is a much more controversial question for English. This question can take various forms in various theories: it may be a question about deep and surface structure, LF, some lexical shift in argument-structure of *be*, or other possibilities. The Williams-Partee account proposed that *be* always

takes two arguments of types  $e$  and  $\langle e, t \rangle$  (or more generally  $X$  and  $\langle X, t \rangle$ ), but that sometimes  $NP_1$  is the predicative, or  $\langle X, t \rangle$ , argument. Thus in the context of that particular type-theoretic claim about the argument structure of *be*, the question is whether  $NP_1$  can be the “predicative argument”. In a theory in which the two arguments of *be* may be of the same semantic type, e.g. both of type  $e$ , the question of possible inversion must necessarily take a different form. In such theories, as well as in theories which make no essential use of semantic types, the question may be framed syntactically, as it is in Chvany (1975) and Moro (1991), where it is proposed that *be* underlyingly takes a small clause complement, and “inversion” is the result of raising the second rather than the first constituent of the small clause into the position of the subject of *be*.

Subquestions include the following:

- (a) What would count as evidence?
  - (b) If there is such inversion, is it only with *be*?
  - (c) What licenses it, what constrains it, what are its functions?
  - (d) If there is no such inversion, what is going on in the sentences that have made some of us think that there *is* inversion?
- (13) Is there a distinction between a “*be* of identity” and a “*be* of predication”, or do copular sentences expressing identity and predication involve the same *be*?
- (14) What is the best explanation of the “connectivity effects” found in some copular sentences? Which copular sentences show such effects, and why?
- (15) Cross-linguistically, how are copular verbs to be described? Do they have their own argument-structure, what determines the cases of their “arguments”, what determines agreement in copular sentences, how many different sorts of copula are there, and are there general principles that “insert” copulas in sentences with no “deep-structure” verbs at all?

One may take two different kinds of perspectives in exploring such questions cross-linguistically. First, within a given language, we may consider a given copula form: can it be given a unified analysis? Secondly, across languages, from a typological and functional perspective, we may consider “kinds of sentences” and how they are expressed in different languages. With respect to various kinds of *be*-sentences and their relatives (such as *have*-sentences), we may consider semantic types such as existential, predicational, specificational, and identificational (or equative) sentences, and ask, as in the work of Freeze (1992), which ones are most often alike or related.

The structure of the rest of the paper is as follows. Section 2 reviews some existing analyses of English copular sentences, some of which invoke multiple *be*'s and some of which have claimed the existence of “inversion” around the copula, in order to account for the distinction between “predicative” and “specificational” sentences and the phenomenon of connectivity. In that section I raise the issues of non-lexical *be* and type-driven interpretation. Section 3 discusses objections to inversion analyses of English copular sentences raised by Heycock and Kroch (1998, in press) and others.

In Section 4 I discuss types of NPs and their “referential status”, and the role of such distinctions in the semantic and pragmatic classifications of copular sentences, including the

issue of the relationship of subjecthood to topichood. In that section I introduce some comparison with Russian, where most, perhaps all, authors do classify some copular sentences as having NP<sub>2</sub> as subject. Returning to and augmenting some of Higgins's original observations, I will question Heycock and Kroch's identification of Higgins's "specificational" type of copular sentence as "equatives".

In the final Section 5 I will review where we stand with respect to the desideratum of accounting for the given distinctions among copular sentences without identifying distinct verbs *be* and also without positing inversion in English.

## 2. Analyses of copular sentences

Note: in this paper, the question of "how many *be*'s" is limited to questions about copular *be*, and to classifications into such types as predicational and specificational, equative and identificational. No claims are being made about the status of other kinds of *be*, such as auxiliary verb(s) *be*, and the "active verb" *be* of example (16) below, discussed in Partee (1976); but see Déchaine (1995) for a proposal unifying all of these.

(16) John is being mean, and Sam is being stupid.

### 2.1. A "classic" two-*be* option

The two-*be* account has a long history and may be considered the "traditional" account. On this account there is a *be* of predication and a distinct *be* of identity, distinguished by the types of their arguments.

The *be* of predication, invoked for examples like those in (6) above, takes two arguments of types *e* and  $\langle e, t \rangle$  (or more generally *X* and  $\langle X, t \rangle$ ), syntactically producing sentences of the form *NP is Pred*. These are often referred to as ordinary "predicational" sentences. The *Pred* may be an AP, a PP, or another NP, and perhaps other things as well. The semantics of this verb *be* is:  $\lambda P \lambda x [P(x)]$ , i.e. it simply applies the predicate to the subject. Note also that since the expression above is equivalent to  $\lambda P [P]$ , this *be* is simply an identity mapping on predicates, contributing no content of its own.

The *be* of identity takes two arguments of type *e*, or more generally of type *X* (with possibly some constraints on the value of *X* in both cases<sup>1</sup>), producing sentences of the form *NP is NP*. The semantics of this verb *be* is:  $\lambda x \lambda y [x=y]$ , i.e. it asserts the identity of its two arguments.

- (17) a. Clark Kent is Superman.  
b. The murderer is Jones.

There is overlap in sentences of the form "NP<sub>1</sub> is NP<sub>2</sub>", which may be "ambiguous". We will return to this issue.

<sup>1</sup> Heycock and Kroch (in press) suggest that while *X* includes predicate types, it does not include the type of generalized quantifiers.

- (18) a. One of his best friends was the poet Samuels.  
 b. Jones was Smith's murderer.  
 c. The pitcher is my brother.  
 d. Her best friend is a dancer.

The examples in (19) illustrate the type-liberality of *be*-sentences, and the fact that the two constituents surrounding the copula need not be just NPs of type *e* and ordinary predicates of type  $\langle e, t \rangle$ .

- (19) a. From Amherst to Baltimore is about 350 miles.  
 b. More expensive isn't always better.  
 c. What he did was run away.  
 d. 55 miles per hour is 88 kilometers per hour.  
 e. Electronically is usually fastest.

Higgins's account of pseudoclefts made use of the two kinds of *be*, and he convincingly argued that the specificational/predicational distinction should be applied to copular sentences in general.

## 2.2. *One-be approaches.*

Montague (1973) analyzed *be* as a transitive verb, with a cleverly constructed meaning which yielded a predicative reading when combined with an indefinite NP and an identity reading when combined with a definite NP. His analysis provided a leading example of how differences in interpretation can result from interaction of different complements with an unambiguous verb meaning, but arguments against this particular account are given in Partee (1987).

Partee (1986, 1987) argued for a single *be*, of predication. I argued there that apparent identity sentences result from the type-shifting of a name or other referential NPs to a corresponding predicative reading. This account follows that of Williams (1983) in claiming that sometimes it is actually the *predicative* argument that appears as NP<sub>1</sub> with *be* in English: this is possibly a unique rule for this verb, since English word order is normally fixed. More details of this "inversion" analysis are given in 2.4., and arguments against it are reviewed in Section 3.

## 2.3. *Non-lexical be and zero-be approaches*

Various authors have proposed that one or both kinds of *be* are forms that appear on the surface but are not underlying lexical verbs at all. Some authors have a "zero-*be*" approach in which there is no lexical verb *be* of either type. This is most similar to a "one-*be*" approach, but with an "empty" *be*. Other authors have what is superficially a "one-*be*" approach, with just one lexical *be*, and with the "other" *be* absent from deep structure (or other relevant "underlying" or "LF" level); this is similar to a "two-*be*" approach in distinguishing the two kinds of *be*, except that it regards one of them as "not really there" on the relevant level.

In the Slavic literature, it has long been noted that insofar as differences in the semantics of different copular sentences can be predicted from differences in the semantics of the "arguments" of the copula, it should not be necessary to posit ambiguities in the copula itself. This argument can be found in Chvany (1975) who distinguishes a lexical existential *be* in Russian from an absent copula, the latter occurring both in predicative and in identity sentences; and also in Padučeva and Uspenskij (1979), who note that there is no language-internal evidence for a distinction in Russian among copular sentences expressing set inclusion, set membership, and identity.

As we review arguments for and against inversion in English, it will become increasingly clear that the real argument is between a one-*be* and a "no-*be*" analysis, with less of the explanatory weight on an analysis of *be* itself and more weight on the interpretations of the constituents it connects (attributive vs. referential use of NPs, etc.), and on the principles of type-driven translation and of information structure (topic-comment structure.)

#### 2.4. *Analyses with inversion around the copula*

The principal motivation of Partee (1986, 1987) was to identify the types of English NPs and the principles governing the type-shifting possibilities within the family of NP interpretations. A second goal was to provide a semantic formalization of the proposals of Williams (1983) for an unambiguous *be*, with its welcome corollary of the possibility of an account of the differences between predicational and specificational pseudocleft sentences with an unambiguous *be*, independently motivated NP types, and with "inversion around *be*" as the only ingredient of the analysis not having strong independent motivation.

If there is just a single *be*, it seems that it must be a *be* which takes two arguments of types *e* and  $\langle e, t \rangle$  (or *X* and  $\langle X, t \rangle$ ), i.e., the "predicational" *be*. On the Williams-Partee account, the apparent instances of a *be* of identity, as in (17a,b) above, still involve the *be* of predication, but one of the NPs is shifted from its basic entity-denoting reading to an "identity predicate" of the form  $\lambda x[x = a]$ .

The positing of the possibility of inversion around *be* means that on this account, there is always an *X*-type argument and an  $\langle X, t \rangle$ -type argument, but that either one may appear as NP<sub>1</sub>, subject to whatever constraints may govern inversion.

Inversion is posited for specificational sentences, like (2) and (7a-d) above, and non-inverted order is assumed for sentences (1) and (6a-d); (8a-d) above are ambiguous. Whenever the post-copular phrase is clearly predicative, the order is non-inverted. When both the pre- and post-copular phrases are definite, potentially referential, NPs, then the order is potentially at issue, and inverted order is taken to correspond to specificational interpretation. In specificational sentences, NP<sub>1</sub> gives an attributive, or indirectly referential, or concealed-question description of a referent<sup>2</sup>, and the post-copular ("referential") NP<sub>2</sub> "specifies" the

<sup>2</sup> This is the characterization of NP<sub>1</sub> in the work of Williams, Partee, and Heycock and Kroch; we return in Section 4 to Higgins's own characterization of NP<sub>1</sub> in specificational sentences as "superscriptional" rather than attributive.

“identity” of NP<sub>1</sub> by providing a referent that is presumably “known” or directly accessible to the hearer. We return to the inversion issue in Section 3.

We review here briefly the semantics of pseudoclefts of Partee (1986), with added notes reflecting subsequent work by others. The principal ingredients are the following:

(i) Independently motivated type-shifting principles. Among the most important ones are the following.

- (20) **ident**: turns an *e*-type expression into an  $\langle e, t \rangle$  expression, mapping an individual onto (the characteristic function of) its singleton set, or equivalently, mapping John onto the uniquely characterizing property of being identical to John.

$$\text{ident}(\mathbf{j}) = \lambda x[x = \mathbf{j}]$$

- (21) **iota**: from  $\langle e, t \rangle$  to *e*. Maps a property *P* onto the unique entity that has *P*, if there is such an entity. A possible interpretation of the definite article in English, or of the unexpressed definiteness “operator” in Slavic languages without articles.

$$\text{iota}(P) = \iota x[P(x)]$$

- (22) **nom**, **pred** from Chierchia (1984). **Nom** maps a (predicative) property onto its individual correlate, e.g. the denotation of  $\langle e, t \rangle$  *blue* to the denotation of the “name” *blue* of type *e*. The operation **pred** is the inverse. The symbols used in the formulas below are  $\nu$ ,  $\wedge$  for **pred**, **nom** respectively.

(ii) A single *be* of predication, whose arguments are of types *e* and  $\langle e, t \rangle$ , in either order, as described above. Apparent cases of identity, with two arguments of type *e*, involve shifting one of the arguments to type  $\langle e, t \rangle$  either by **ident** or by **pred**.

(iii) An account of the possibility of quantifying into and relativizing out of Pred-NP position. This begins with an observation from Ross (1969), that English *that* can be, among other things, a pro-predicate.

- (23) They said Mary was beautiful, and she is that.

It has also been noted in the literature that the use of *that* and *what* to “denote” unambiguously human referents is diagnostic of a predicate-type use. The examples below are from Williams (1983).

- (24) a. What did John become? A doctor.  
b. #What did John talk to? A doctor.

Partee (1986, 1987) formalized this phenomenon by positing a pro-form *that*<sub>*i*</sub>, interpreted as an *e*-type variable *x*<sub>*i*</sub>, restricted to range over (entity-correlates of) properties, the same sorts of things denoted by *e*-type expressions like *this color*, or the nominalized version of *blue*, as handled in Chierchia (1984). Such “attribute expressions” can be

predicativized by Chierchia's **pred** operator. In the case of *that*, this gives us an  $\langle e, t \rangle$  predicate expression whose interpretation is " $x_i$ ". I assumed that the predicativization rule creates a complex but non-island structure [<sub>Pred</sub>[<sub>NP</sub> *that*]] of type  $\langle e, t \rangle$ , containing within it the  $e$ -type [<sub>NP</sub> *that*]<sub>i</sub> in a position accessible to quantification and relativization. This gives an explanation of the possibility of relativizing and quantifying into predicate position, but only for "property" expressions. This handles not only the pseudocleft and related data, but also the possibility of property-quantification in sentences like the following:

- (25) Fred is everything I wanted him to be.

The structure underlying the free relative *what John is* is then as in (26), paraphrasable as "John has the property denoted by  $x_i$ ."

- (26) John is that<sub>i</sub> : " $x_i(j)$ "

The rule for free relatives, which is given in somewhat different forms in different works, gives a definite description interpretation for *what John is*, of type  $e$ . Partee (1986) used the simple iota-operator, as shown below; more sophisticated analyses make use of Link's supremum operation (Jacobson 1994) or Rullmann's maximality operator (Sharvit (to appear)).

- (27) [<sub>NP</sub> what John is]<sub>e</sub> :  $\iota x[\langle x(j) \rangle]$

Now consider an ambiguous pseudocleft such as (28).

- (28) What John is is unusual.

Williams 1983 and Partee 1986 claim that copular sentences always exemplify one of the two patterns  $e \_ \langle e, t \rangle$  or  $\langle e, t \rangle \_ e$ . On its predicative reading, (e.g. John is a skydiver, and being a skydiver is unusual), the free relative has its basic type  $e$  interpretation, as given above, and the predicate has its basic  $\langle e, t \rangle$  reading, and there is no inversion. The resulting interpretation is simply:

- (29) unusual'( $\iota x[\langle x(j) \rangle]$ )

Partee's (1986) semantics formalizes Williams's claim that the specificational reading of (28) involves a role reversal of the two parts, with the free relative shifted to a predicative reading of type  $\langle e, t \rangle$  by the operation **ident** and the adjective nominalized to type  $e$  by the operation **nom**. (30) is an "uninverted" specificational sentence, showing normal subject-predicate order, but with the same operations of **ident** and **nom** figuring in its derivation.

- (30) Unusual is what John is.

The result of shifting the free relative *what John is* by the operation **ident** is given in (31), paraphrasable as "the property of being the property that John has". Note that the **ident**

operation puts the identity relation into the shifted meaning of NP<sub>2</sub>; this is what allows us to dispense with a separate *be* of identity.

$$(31) \quad \lambda y[y = \iota x[\iota x(j)]]$$

Applying the predicativized free relative to the nominalized property *unusual*, for both (28) and (30), gives us the semantic result below, which can be simplified as shown, modulo a uniqueness presupposition missing from (34). Line (33) says that the property 'unusual(ness)' is the property that John has.

$$(32) \quad \lambda y[y = \iota x[\iota x(j)]](\iota unusual)$$

$$(33) \quad \iota unusual = \iota x[\iota x(j)]$$

$$(34) \quad unusual(j)$$

The equivalences shown give the core of a semantic explanation of syntactic connectedness; satisfying fuller accounts which use many of the same ingredients are given by Jacobson (1994) and Sharvit (to appear). See also Heycock and Kroch (in press); they disagree with parts of this account, but their account is in many respects compatible with this one. All four accounts depend crucially on the fact that identity shows up as the relation connecting the parts; they differ in how the identity relation enters the semantic interpretation compositionally, and exactly what the semantic interpretation of the free relative and the other constituent is.

For Williams (1983) and Partee (1986), although not for Jacobson (1994) or Sharvit (to appear), inversion around the copula was a crucial ingredient of the story, as was the fact that the copula itself is unambiguous and demands one *e*-type argument and one  $\langle e, t \rangle$ -type argument. But in what follows, we will see reasons to question the necessity and desirability of these two assumptions.

### 3. Arguments against inversion in English

#### 3.1. *The ungrammaticality of true predicates in subject position*

Heycock and Kroch (in press) argue that specificational sentences are equatives, with two arguments of type *e* (more generally, of type *X*, for a restricted range of *X*). One of their strongest arguments against treating specificational sentences as inverse predicational sentences is that there are no well-formed examples of unambiguously predicational sentences in which the predicate occurs in subject position.

This is a serious argument. Heycock and Kroch believe that the type structure in copular sentences may be  $e \_ e$ , i.e. an *e*-type argument on each side of the copula, or (in predicational sentences)  $e \_ \langle e, t \rangle$ , but never, as Williams (1983) and Partee (1986) claim for specificational sentences, of the pattern  $\langle e, t \rangle \_ e$ .

As Heycock and Kroch (in press) emphasize, it is certainly an argument against the Williams-Partee approach if there are no examples which independently exemplify the pattern

<*e*,*f*>\_\_\_*e*; in all the examples offered by Williams and Partee, the initial supposedly <*e*,*f*> expression is a type-shifted version of an *e* expression.

Partee (1986) indeed noted that among unexplained phenomena on this approach is the lack of ambiguity of sentences like (30), which is unambiguously specificational, contrasted with the ambiguity of (28), which may be either specificational or predicational.:

Heycock and Kroch (in press) note that, as (30) shows, there is no blanket prohibition against APs as subjects of *be*, only against unambiguously *predicative* APs in subject position. Their examples (35), (36) show similar asymmetries with NPs, which cannot be preposed when they must be interpreted as predicational.

- (35) a. John is a doctor.  
b. \*A doctor is John.
- (36) a. John is the one thing I have always wanted a man to be. [e.g., honest.]  
b. \*The one thing I have always wanted a man to be is John.  
c. The one thing I have always wanted a man to be is honest.

The last example shows clearly that the “preposability” of an expression, or possibility of inversion around the copula, depends not on the form of the expression but on its interpretation as referential or predicative. This is a strong argument against Williams’ and Partee’s analysis of specificationals as inverted predicatives.

### 3.2. *Apparent inversions in English: not into subject position?*

Of course there are sentences in English that clearly involve predicate fronting, and Partee (1998) suggested that these provide independent evidence for inversion around the copula.

- (37) In the bathroom are seventeen sculptures.

But Heycock and Kroch note that such locative inversion, as well as some other types of inversion that they discuss, has properties that distinguish it from the putative predicate inversion of Williams and Partee. In particular, the clearly attested inversions do not show any evidence of being inversion into subject position; number agreement continues to be with the post-copular phrase in examples like (37), which is not the case for specificational sentences. This is true even when the inverted element is an NP, as in the following example from Heycock and Kroch (in press), who cite Birner (1992).

- (38) Also a menace to our society are/\*?is factory closings and declining standards.

As Heycock and Kroch (1998) note, Italian clearly has “scrambling” possibilities for equative sentences, as shown by Moro (1991), but they argue that English does not.

### 3.3. Williams's counterarguments

Williams (1997) argues that there are no equative sentences, maintaining the claim that all copular sentences are asymmetrically predicational, with specificational sentences amounting to "inverted" predicational sentences. What Williams means here by "predicational" is not completely clear. On the one hand, his principal explication is that "one end of the relation is a theta-role donor, and the other a receiver" (Williams 1997, p.323), an explication which one might expect to represent in type-theoretic terms as I have done above, the 'donor' being of type  $e$  and the 'receiver' of type  $\langle e, t \rangle$ . On the other hand, when discussing copular sentences containing two proper names, Williams allows that the predicate may itself be "referential", not requiring the kind of type-shift effected by an operator like **ident**. He asserts that in general, "The semantic content of the asymmetry [of the predication relation] is epistemic priority based on "directness of acquaintance", a notion that would not seem directly applicable to expressions of type  $\langle e, t \rangle$  at all.

Williams notes that the account of connectedness effects given by Heycock and Kroch (to appear), involving "iota conversion", has much in common with the account involving lambda conversion offered by Williams (1983) and Partee (1986), but disagrees with Heycock and Kroch's contention that the asymmetry observed in predicational sentences is different in kind from the asymmetry observed in specificational (for them equative) sentences. We focus on the issue of the nature of the asymmetry in copular sentences in Section 4.

## 4. Kinds and uses of NPs and kinds of copular sentences

### 4.1. Distinctions among NPs in type-theoretic frameworks

Distinctions among the semantic interpretation and pragmatic force of various NPs in various contexts have long been a major topic of study. In particular, the question of the "referential" role or status or interpretation of NPs has been one of the driving issues first in the separation of semantics from syntax and later in debates about the semantics-pragmatics interface.

The dispute between Williams (1997) and Heycock and Kroch (1998, to appear) seems to rest in part on the fact that the nature of the distinction between predicational and specificational (and other) copular sentences is still not clear. On the type-theoretic reconstruction of Section 2, I suggested one clear distinction between types of copular sentences: are the terms connected by the copula both of type  $e$ , or is one of them of type  $\langle e, t \rangle$ ? (Or more generally, are both terms of some same type  $X$ , or is one an  $X$  and the other an  $\langle X, t \rangle$ ?)

On the type-theoretic reconstruction,  $e$  is the type for "referential" expressions, and expressions of type  $\langle e, t \rangle$  cannot be said to be referential in any clear sense. (We ignore quantificational NPs, analyzed as type  $\langle \langle e, t \rangle, t \rangle$ .) Among  $e$ -type NPs, type theory does not give us an obvious way of calling some NPs "more referential" than others, and although the type-shifting operator **ident** gives us a way of shifting an  $e$ -type NP to type  $\langle e, t \rangle$  so as to analyze a sentence like (17a), repeated below as (39), as formally predicational, it does not

offer any explanation of why we would choose to shift one name rather than the other in such a sentence, nor any basis for the intuition of Williams (1997) that relative degree of referentiality has something to do with epistemic priority.

(39) Clark Kent is Superman.

Every author who wrestles with the problem of the classification of different kinds of copular sentence is faced with the question of the referential status of the two elements in identity sentences, and it seems clear that we have to pay attention not only to semantics but to pragmatics. At this point the work of Padučeva and Uspenskij (1979, 1997) on Russian binominative sentences is directly relevant.

#### 4.2. *Relative referentiality and Russian binominative sentences*

Padučeva and Uspenskij (1979) address the problem of identifying the subject in Russian binominative sentences. Russian, unlike English, sometimes shows clear morphological evidence of inversion in copular sentences, because in some cases one of the arguments is nominative and the other instrumental. In those cases it is quite generally agreed that the subject is the one marked nominative and is the "referential" argument, while the one marked instrumental is understood predicatively. And in Russian, there are cases where the instrumental NP is sentence-initial, the nominative NP sentence-final.

The central concern of Padučeva and Uspenskij (1979, 1997) is Russian binominative sentences, copular sentences with two NPs both marked nominative. The earlier paper is concerned with finding criteria for identifying one NP or the other as subject; they argue that the principal criterion concerns "degree of referentiality", a notion that has both semantic and pragmatic aspects. (Note that Donnellan's distinction between referential and attributive uses of definite NPs can be said to concern principally NPs which we would semantically analyze as type *e*; for other types, such as predicative type  $\langle e, \iota \rangle$  or quantificational type  $\langle \langle e, \iota \rangle, \iota \rangle$ , one can either call them all attributive or, probably better, say that the question does not arise.) They make a number of fine-grained distinctions in the roles of the "arguments" of the copula, including degree of referentiality, status as "known" or "familiar" in various senses, etc., and identify various kinds of topicalization and focalization phenomena that can trigger inversion from the basic subject-first word order. These issues are particularly sensitive in the case of "identity sentences".

In their later paper they address the problem of agreement for the copula: on their analysis, the copula does not always show agreement with the argument they have identified as subject, nor does it always agree with the argument that comes first in the sentence. They propose a set of principles to predict the actual patterns of agreement that are found, with the preference for agreement with the subject just one of the factors. Clearly the relation of number agreement to subjecthood is more complex in Russian than in English.<sup>3</sup>

<sup>3</sup> Wayles Browne (in press) adds both cross-linguistic data and a range of problems and hypotheses concerning number agreement and other puzzling properties of Slavic copular sentences, particularly South Slavic

Roger Higgins (p.c.) has been collecting examples of English sentences, spoken and written, which show number agreement with the postcopular NP in specificational sentences, as in (i), showing that the situation in English is

4.3. *Inversion in Russian and not in English*

The chart below is an English condensation of the chart in which Padučeva and Uspenskij (1979) summarize the four main cases of binominative sentences (Padučeva and Uspenskij 1979, p.354). In the chart, I and II refer to what we are calling NP<sub>1</sub> and NP<sub>2</sub>. They give more examples in each row than we have included here.

(40)	Status of I	Status of II	Subj:	Examples
(i)	Referential NP	Predicative NP	I	(41), (42)
(ii)	Quantif. NP	Predicative NP	I	(43)
(iii)	Attributive NP	Purely ref. NP	II	(44)
(iv)	Predicative NP	Quantif. NP	II	(45)

  

(41) On       vrač.  
 he-NOM doctor-NOM  
 'He is a doctor.'

(42) Juvelir     Fužere – vladelec   etogo   osobnjaka.  
 jeweler-NOM Fužere   owner-NOM this-GEN mansion-GEN  
 'The jeweler Fužere is the owner of this mansion.'

(43) Zdes' kažđaja fraza – jarkaja podrobnost'.  
 here each   phrase-NOM bright detail-NOM  
 'Here each phrase is a bright detail.'

(44) Vladelec   etogo   osobnjaka – juvelir     Fužere.  
 owner-NOM this-GEN mansion-GEN jeweler-NOM Fužere  
 'The owner of this mansion is the jeweler Fužere.'

(45) Aksioma – èto istina,   prinimaemaja bez  
 axiom-NOM èto truth-NOM, accepted   without  
 dokazatel' stv.  
 proof  
 'An axiom is a truth accepted without proof.'

They discuss the traditional test (similar to but not identical to the two tests mentioned by Chvany 1975) of looking for the closest paraphrase one of whose NPs is in the instrumental, and concluding that the corresponding NP in the original sentence is the non-subject. They note that even if the test is normally a reasonable diagnostic, a linguist still needs to ask why such a test should work. It is not true that an NP in the instrumental always denotes a "temporary" attribute. It is probably rather the case that the choice of which of two NPs to put into the instrumental (if either), *like* the decision which of two nominative NPs to consider the subject, reflects the relative denotational status of the two NPs.

not entirely simple either.

- (i) The one thing I want to add are individual constants. [N.Belnap, 1978, oral]
- (ii) What makes something a pencil are superficial characteristics such as a certain form and function. [Schwartz 1978, in *Phil.Rev.* 87, p.571]

They note that it is not always possible to put one of the NPs into the instrumental; and they argue that even when you can, it is not true that that NP is always the predicative one.

The clearest case of inversion around the copula in their analysis is line (iii) in (40), which amounts to an inversion of line (i). (The relation of line (iv) to line (ii) is less clear and I will not discuss it.) They have nice discussion of the fact that the change in word order is accompanied by a subtle change in denotational status, connected with the fact that the predicative NP, when it is moved into the sentence-initial position (assuming neutral intonation), gains a presupposition of existence. Note: it need not be a definite NP; they observe that both definite and indefinite NPs (notionally; this may be unmarked in Russian) gain an existence presupposition in sentence-initial position which they lack in post-copular position. (This is shown, for instance, by the negation test, and was discussed in earlier work of Paduceva's. This also fits Hajičová's (1984) analysis of allegation and presupposition and their connection with Topic-Focus structure.)

As a result of the additional existence presupposition in line (iii), both NPs in (iii) have an existential presupposition: NP<sub>1</sub> because of its position (some would say because it is subject, others because it is topic), NP<sub>2</sub> because of its own semantic content. (If NP<sub>2</sub> didn't, we would presumably have a case of line (i), not line (iii).) If either of the NPs in (iii) is definite, it also gets a uniqueness presupposition; if indefinite, not.

In lines (i) and (ii), the relation expressed is set membership or set inclusion; these are not linguistically differentiated. In line (iii) the relation is identity. But as they note, identity is not a straightforward relation; in order for an identity sentence to be informative, as discussed by Frege, it must be almost a metalinguistic assertion, or at least the informative value will in some sense come from the use of two distinct characterizations of a single entity. These sentences in line (iii) seem to be just the "specificational" copular sentences of Higgins (1973). Both NPs are referential in one sense, but the first NP is "attributively used" and the second one is "purely referential." On the Williams-Partee analysis of corresponding sentences in English, NP<sub>1</sub> is the surface syntactic subject but was the "underlying" predicate and is still the <e,t> element and so semantically still the predicate. (Since in Russian the first NP does not always have nominative case and does not always govern agreement, there is less motivation for calling that the surface subject position.)

Comparing the work of Paduceva and Uspenskij (1979, 1997) and Chvany (1975) with the arguments of Heycock and Kroch (to appear), it seems most reasonable to conclude that Russian does have inversion around the copula and English does not. That is, Russian has equative sentences in which the post-copular NP is really the subject in every sense, and English does not. Lingering doubts that need to be more fully resolved concern the English equivalents of Russian sentences whose pre-copular NP could be in the instrumental.

#### 4.4. *Type distinctions, referentiality, and topicality*

I believe that one of the shortcomings of the analysis of Partee (1986) was the attempt to explain the difference between predicative and specificational copular sentences using

nothing more than semantic types and syntactic structure (initial position and/or subjecthood). Consider again the specificational sentences of (7). On the Williams-Partee analysis, NP<sub>1</sub> is a predicate, which on the formalization of Partee (1986) means it is of type  $\langle e, t \rangle$ . On the Heycock and Kroch analysis, both NP<sub>1</sub> and NP<sub>2</sub> are of type  $e$ , but NP<sub>1</sub> is attributive and NP<sub>2</sub> is referential. (This agrees with Padučeva and Uspenskij's diagnosis of the cases in line (iii) of chart (40).) The occurrence of the less referential NP as NP<sub>1</sub> in specificational sentences, whether it is subject (as in English) or not (as in Russian), seems to be conditioned in part by its topicality, as noted by Sgall (1995), Percus (p.c.), Heycock and Kroch (in press), and others.

So at this point, recognizing that semantic type distinctions are only one part of the story, let's recast the question about whether there is ever inversion around *be* into several different questions. One is the type question: is NP<sub>1</sub> ever of type  $\langle e, t \rangle$ , NP<sub>2</sub> of type  $e$ ? In Russian, as we have seen, the answer seems to be "yes", particularly when NP<sub>1</sub> can be instrumental; but in those cases, NP<sub>1</sub> is not the subject. For English, at this point the answer to this question seems to be "no".

Another is the question of how to characterize the nature of the asymmetry in case NP<sub>1</sub> and NP<sub>2</sub> are both type  $e$  (or both  $X$ ), since that now seems more plausible for the specificational sentences. There are certainly strong intuitions that in specificational sentences NP<sub>2</sub> is the 'more referential' one, and in almost all cases of specificational sentences there is an alternative word order possible with NP<sub>2</sub> first and NP<sub>1</sub> second. And we have noted that for specificational pseudoclefts, such an alternative word order is possible even when the non-free-relative term is not an NP, as in (30); this is the word order which Williams - Partee consider basic.

The contrast "more referential, less referential" shows up informally in many descriptions. In copular sentences, NP<sub>1</sub> is "normally" more referential than NP<sub>2</sub>. In general, subjects are "normally" more referential than non-subjects, topic is "normally" more referential than focus, expressions of type  $e$  are normally more referential than those of type  $\langle e, t \rangle$ .

In the cases of putative inversion, NP<sub>1</sub> is usually understood to be less referential than NP<sub>2</sub>; that is one of the chief intuitive diagnostics. One encounters various discussions of what more/less referential means here: relatively direct acquaintance (Williams), rigid designation (Percus), presupposed familiarity (Heycock and Kroch). It isn't simply uniqueness, since in many specificational sentences both NPs have a uniqueness presupposition. Several authors have noted the similarity to Donnellan's referential/attribution distinction; Heycock and Kroch explicitly invoke it.

The relevance of the topic/focus distinction is also made explicit by a number of authors, including Sgall (1995), Heycock and Kroch (in press) and Percus (1997). Subjects are normally topics, but subjects can often be focused in English by means of stress and intonation. But it seems that when there is "inversion", NP<sub>1</sub> is invariably topic, and trying to focus it leads to anomaly. Example (46) is from Williams (1997); (47) completes the picture.

- (46) Is the mayor Sam?  
 (a) No, the mayor is Pete.  
 (b) \*No, the FIRE CHIEF is Sam.  
 (c) No, Sam is the fire chief.
- (47) Is Sam the mayor?  
 (a) No, Sam is the fire chief.  
 (b) No, PETE is the mayor.  
 (c) No, the mayor is Pete.

The question in (46) is in specificational form, and note that the question itself would be anomalous with focal intonation on the subject, unlike that in predicational (47), which has a well-formed variant with focus on the subject. Similarly, the answer in (46b), a specificational sentence with focus on the subject, is ill-formed, whereas predicational (47b) is well-formed.

Thus it seems that the discourse function of "inversion" is to topicalize the less referential NP. We have tentatively concluded that there isn't really inversion in English; but there is an asymmetry which leads to the "intuition of inversion". Orin Percus (p.c.) has articulated it as a restriction that the less referential NP (the "mask" in his terms) can "invert" only when it's topical, and only when the relation is the relation of identity, not predication.

Thus on a non-inversion account such as Heycock and Kroch's, we might say that what is going on in English is that the generalization that the more referential NP is normally the subject is overridden by the desire to make the topic the subject. Both Williams for English and Pađučeva and Uspenskij for Russian state the generalization that the more referential NP is the subject. For Russian, that may indeed be a valid generalization, and one of the crucial differences may be that Russian has the word-order freedom to prepose a less referential but topical NP and postpose a more referential but focal NP without having to make the preposed NP (i.e., NP<sub>1</sub>) the subject. But English does not have that freedom, so the only way to get the topical NP into initial position is to make it the subject.<sup>4</sup> *Be* does not passivize; but when it can be interpreted as expressing identity, it doesn't need to.

See Heycock and Kroch (1998) for a similar argument about why Moro (1991) may be correct about inversion in Italian without his arguments carrying over to English.

The relationship between a pair of "uninverted" and "inverted" copular sentences in English like (36) and (30), then, would not be a case of any syntactic rule or of two surface structures with a common deep structure or common LF, but more akin to the difference in choice of expression in a pair like (48a-b).<sup>5</sup>

<sup>4</sup> Here I follow one of Vilém Mathesius's (1907-1910) insights about the importance of theme-rheme structure for understanding the comparative syntax of Czech (or Russian) and English. Petr Sgall (p.c.) notes that English still has traces of post-verbal subjects and preverbal non-subjects in presentational and other sentences, but that these are waning.

<sup>5</sup> Except that in (48a-b) the most relevant additional factor is "figure-ground" asymmetry rather than topic-focus asymmetry.

- (48) a. The house is near the field.  
 b. The field is near the house.

4.5. Higgins' "superscriptional" uses of NPs

But we have not yet done justice to further subtleties of interpretation that have been observed by Higgins and by others. If one reviews the discussion of Higgins (1973), one sees that even the distinction between predicative and equative sentences invoked by Heycock and Kroch (to appear) does not adequately capture Higgins's distinctions: Higgins distinguished specificational sentences from both predicative sentences and identity sentences.<sup>6</sup>

Higgins notes that there are specificational sentences, including both pseudoclefts and other copular sentences, whose subject term can never be used referentially in a predicative or other sentence.

- (49) What I don't like about John is his tie. (Higgins 1973, p.133)

As Higgins notes, the free relative in (49), "simply cannot be used as an alternative description which can be used to refer to John's tie in the same way as *the lurid thing John's wearing round his neck* can be. This is, of course, valuable evidence that the Specificational reading of a copular sentence is not the expression of some kind of identity." As Higgins also notes, an NP like *what I don't like about John* can indeed be used as the heading of a list; and Higgins likens specificational sentences to lists, with the less referential NP (his "Superscriptional NP") functioning as the "heading" of a list, and the more referential NP (his "Specificational NP") specifying a (or the) item on the list. (Williams's (1997) terminology of "description" and "item" is close to the spirit of Higgins.)

Higgins also mentions but does not extensively discuss the existence of specificational sentences with indefinite NP<sub>1</sub>, indefinite NP<sub>2</sub>, or both. Some examples of these are given in (50).

- (50) a. One thing John is proud of himself.  
 b. Another thing John is hard on himself.  
 c. One friend of mine you could talk to is Diana.  
 d. Another threat to the stability of the government is a recent rumor of another impending devaluation.

Similar examples can help to show that Superscriptional NPs do not simply have the distribution of predicative NPs in predicational sentences.

<sup>6</sup> In fact, Higgins went further and tentatively distinguished "identity" sentences from "identificational" sentences, a distinction I will not try to reproduce here.

- (51) a. One friend of mine is my old friend Beth.  
 b. \*?A friend of mine is my old friend Beth.  
 c. \*?My old friend Beth is one friend of mine.  
 d. #My old friend Beth is a friend of mine. [redundant]

While (51a) is a natural specificational sentence that might be used when beginning to answer a request to tell something about your friends, (51b) with a simple indefinite NP as subject is somehow anomalous. (51c) is an attempt to reverse the word order of (51a), and it is also anomalous unless it can also be read as specificational. (51d), the same with plain indefinite article, is grammatically impeccable, but functionally very different from (51a): rather than having a possible specificational use, it is simply a redundant and therefore odd-sounding predication.

The determiner *one* in the examples in (50) and (51) does not seem to be really quantificational (although certain other weak determiners including other numerals are also OK here); it contrasts with *another*, and seems consistent with Higgins's claim that these sentences are like the presentations of lists, not like truth-claims "about" either NP<sub>1</sub> or NP<sub>2</sub>. Higgins gives examples and arguments showing that superscriptional (uses of) NPs differ from attributive (uses of) NPs, as well as distinguishing them from referential and from predicative NPs.

A number of authors who favor a "zero-*be*" or "one-*be*" approach, from Chvany (1975) to Heycock and Kroch (in press), relate copula sentences to small clauses. We should ask which overt "small-clause" constructions, if any, permit the kinds of NPs which seem to be restricted to "superscriptional" uses, while recognizing that restrictions on the occurrence of such NPs may reflect pragmatic factors, if the discourse function of specificational sentences is special, as Higgins suggests.

- (52) a. #I consider one/another friend of mine you could talk to John Smith.  
 b. ??I consider John Smith one/another friend of mine you could talk to. (Maybe possible, but not "specificational"?)  
 c. #One/another friend of mine you could talk to remains John Smith.  
 d. #John Smith remains one/another friend of mine you could talk to.  
 e. #?That makes one/another friend of mine you could talk to.  
 f. ?That makes John Smith one/another friend of mine you could talk to.  
 g. ?That makes proud of yourself one/another thing you should try especially hard not to be.

Small-clause and raising constructions with *consider* and *remain* seem quite bad. The best seem to be those with *make*; interestingly, they are best when the NPs are in the order posited as more basic in the Williams-Partee analysis, supporting the intuition that specificational sentences are in a sense "inverted". Heycock and Kroch (to appear) note that *make* is a verb which allows "equative" small clauses, unlike *consider* and others which only allow predicative small clauses.

These small-clause observations together with Higgins's original observations suggest that specificational sentences may be best thought of as very similar to if not a subclass of identity sentences, usually occurring "inverted" in that the "less referential" but more topical NP is usually chosen as the subject (a choice which is apparently resisted in overt small clauses), and with the possibility of a special discourse ("list-presenting") function which may help to account for some of the restrictions on the NPs that can occur within them.

I do not consider the issue settled, however. On the one hand, the distinction between predicative NPs, of type  $\langle e, t \rangle$ , and referential but attributive NPs, of type  $e$  but with different referents in different possible situations, is formally large but notionally less so, and languages may easily have operations shifting expressions from one of these types to another.<sup>7</sup> And even more importantly, any serious analysis of the syntax, semantics, and pragmatics of pseudoclefts and of specificational sentences must occur in the context of a fuller specification of theoretical and descriptive assumptions than we have committed ourselves to here.

#### 4.6. *Connectivity again*

There have been three main approaches to semantic connectivity.<sup>8</sup> The first, incomplete, Williams-Partee approach was outlined in Section 2; it used lambda-conversion but did not fully explain why this particular instance of equivalence via lambda-conversion counted as such "strong" equivalence as to yield the connectivity effects.

The second, articulated initially by Jacobson (1994) and modified by Sharvit (to appear), explains the strength of the equivalence by providing "functional" readings for the crucial NPs, similar to the functional readings discussed by Engdahl and others in the case of "functional questions", or which show up in the famous Geach example (53).

(53) The woman every Englishman worships above all others is his mother.

Jacobson makes central provision for functional readings in her variable-free semantics; not only for examples like (53) but also for the semantics of reflexive pronouns and other replacements for "bound-variable anaphora". Sharvit makes use of a variant of von Stechow's "layered traces" to capture functional readings. On both versions of this approach, the identity relation expressed somewhere in the sentence (whether by the copula or packed into a predicative expression via a type-shifting operation like *ident*) connects expressions of functional type in a way that gives a direct and principled account of the connectivity facts.

<sup>7</sup> Incorporation analyses of 'weak NP' objects such as those of McNally (1995) and Van Geenhoven (1996) illustrate this possibility, as does the proposal of Zimmermann (1993) to treat the objects of verbs like *seek* as property-expressions.

<sup>8</sup> I take Higgins to have shown that no purely syntactic approach to connectivity by reconstruction can succeed; whether the syntactic aspects of connectivity can be treated as parasitic on a basically semantic approach I do not know.

A fourth semantic approach has come to my attention too late to address; Yael Sharvit (handout, 1999) has made me aware of the manuscript Schlenker (ms. 1998), which argues for a "question-in-disguise" semantics of Superscriptional NP and an "answer-in-disguise" semantics for the Specificational NP. Sharvit argues against this approach.

Ignoring interesting differences between them, I would say that the Jacobson-Sharvit account is the best supported account currently available.

The third account is Heycock and Kroch's; they make use of the identity reading of the copula and the iota-expression that interprets the free relative of a pseudocleft, and accomplish something similar to the lambda-conversion of Williams and Partee but with possibly better motivation. However, their use of the iota-expression suggests that their account is dependent on the definiteness of both terms of a specificational sentence. If there are specificational sentences involving indefinite terms, as the examples in (50) and (51) suggest, it is not clear how Heycock and Kroch will be able to accommodate them.<sup>9</sup>

All three approaches make use of the identity relation, suggesting that in some sense it is true that specificational sentences are identity sentences. But the approaches differ interestingly in where they locate the identity relation compositionally, in the copula or in a (shifted) predicative NP; only on Heycock and Kroch's approach is it essential that specificational sentences be analyzed as identity sentences.

#### 4.7. *Languages without specificational pseudoclefts*

Recent work by Iatridou and Varlokosta (1998) (I&K) adds more perspective. They note that many languages lack specificational pseudoclefts, including Modern Greek, Polish, and Bulgarian. Among closely related languages, Brazilian Portuguese, Galician, and Spanish pattern with English, while Italian and Catalan are like Greek. They identify a crucial factor as the possibility of generating a free relative with a non-referential (predicative) reading: possible in the languages that do have specificational pseudoclefts, impossible in those that do not. Free relatives in Modern Greek, for instance, can be formed by two constructions, one analogous to (54a), the other to (54b), but neither allowing the kind of predicative or attributive or "superscriptional" reading that is possible with English (54c).

- (54) a. That which John ate  
 b. Whatever John ate/ Everything John ate  
 c. What John ate

Their work adds evidence for the importance of "degrees of referentiality" in the analysis of specificational sentences; it is interesting that not all languages that have free relatives have the distinction between predicational and specificational pseudoclefts, only those with "non-referential" free relatives. They follow Williams and Partee in assuming predicative readings for free relatives in specificational sentences; it would be interesting to see whether the same account could be modified to fit an approach on which free relatives in specificational sentences are attributive definite NPs.

<sup>9</sup> One possibility would be to try to analyze the relevant indefinite NPs as "specific" or otherwise close enough to definites to extend the analysis to them. Another approach might be to challenge the inclusion of (50) and (51) as specificational, as Iatridou and Varlokosta (1998) do.

### 5. Capturing the distinctions without inversion and without ambiguous *be*

It would clearly be optimal to have an account in which there are not two distinct *be*'s, and in which English has no special inversion rules with *be* that don't operate more generally. In particular, English does not seem to have movement of an initial non-subject into a real subject position with *be*. And such an account seems within reach now.

The best strategy may not a one-*be* approach with fixed types *e* and  $\langle e, \triangleright \rangle$  as in Williams and Partee, but a zero-*be* approach with fuller use of type-driven translation, looking carefully at types, and at the semantics and pragmatics of the two constituents that can appear with the copula.

Heycock and Kroch (1998) also posit an unambiguous copula – in that paper they make it clear that they want just one copula, unambiguous, itself semantically vacuous, a raising verb that combines with a small clause. The ambiguity is in the small clause itself: small clauses may be either predicative or equative. They have not settled how to represent this difference; they speculate that equative small clauses involve some functional head, absent from the predicative cases. As noted in Section 4.5, the marginally possible occurrence of uniquely “superscriptional” NPs in equative small clause sentences with *make* seems to support the small-clause aspect of Heycock and Kroch's analysis.

It therefore seems that the one-*be* analysis of Williams (1983) and Partee (1986) which required inversion should be replaced by a zero-*be* analysis together with a fuller use of type-driven translation.

So let us assume that either directly or via a small clause, the empty copula position is a position governing two arguments (or one internal argument and a subject). If the two constituents are of types *X* and  $\langle X, \triangleright \rangle$ , type-driven translation will automatically treat the second as a predicate to be applied to the first. But if the two constituents are both of type *X*, type-driven translation by itself may not know what to do with them: there could be at least three very “natural” ways to combine two expressions of type *X*, especially if *X* is of a predicative type. The two constituents could be conjoined; one could be an intersective modifier of the other (this is almost a case of conjunction), or identity could be asserted to hold between them. For arguments of the copula, only the last-mentioned case seems a real possibility; if there is no actual copula, something in the structure needs to allow us to predict that. This is probably the motivation for Heycock and Kroch's assumption of an additional “functional head” in equative small clauses. Alternatively, on an account like Déchaine's (1995), if one of the *X*'s is in a position where it is supposed to be predicated of the other, the identity relation may be the only available well-formed interpretation and therefore predictable.

Where do we stand on the asymmetry that Williams (1997) argued is observed in all copular sentences, whether “equative” or not? I believe that there can be pragmatic or information-structural asymmetry without necessarily being semantic type-theoretic asymmetry. I would suggest that Russian does but English does not obey a principle articulated by Williams (1997) and by Padučeva and Uspenskij (1979), namely that in a

copular sentence, the more referential NP is always the subject. We have argued above that in English, the subject may be the less referential NP if that NP is the topic. Williams is probably correct to insist that no copular sentence is understood as perfectly symmetrical in its two terms, even if those are two proper names or other parallel expressions; but it does not follow that that asymmetry must be reflected as a difference in semantic types. The types could be  $X$  and  $X$ , and the asymmetry could lie in topic-focus structure. The differences in presumed degree of familiarity or directness of acquaintance, for which there is so far no strong theoretical underpinning, seem as likely to follow from topic-focus structure as from differences of semantic type.

The puzzles of inversion around the copula are by no means all resolved. But the investigation has led us to some interesting speculations about cross-linguistic semantic and pragmatic issues. There are well-known syntactic distinctions among languages in the realm of copular sentences: how many distinct copulas, how number agreement works, the "case" of predicate nominals, the presence of various deictic-like expletive elements, and whether the language allows postnominal subjects in copular sentences to a greater extent or in a different way than in other sentences. So it is already relatively clear that different languages may express semantically equivalent propositions in different syntactic structures. With the study of specificational copular sentences we may have entered a domain in which pragmatically equivalent meanings may find expression in different languages in different semantic structures.

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