Specificational subjects are individual concepts*

Karlos Arregi, Itamar Francez, Martina Martinović University of Chicago

May 2, 2018

1 Introduction

The theoretical literature on copular sentences draws a distinction between two kinds of copular sentences in which the post-copular element is a noun phrase. Since Higgins (1973), the two kinds have come to be known as *predicational* and *specificational*, and are exemplified in (1).

(1) a. Clara is a/the lawyer.

Predicational

b. The lawyer is Clara.

Specificational

Predicational sentences like (1a) are semantically relatively unproblematic. There is wide consensus that, at a certain level of description, their interpretation is similar to that of copular constructions in which the main predicate is an adjective or a prepositional phrase. The subject noun phrase (e.g. Clara) is referential or quantificational, and the postcopular noun phrase (e.g. a/the lawyer) expresses a property of the things the subject noun phrase refers to or quantifies over. Within a standard model theoretic framework, and stated in settheoretical terms, the sentence has the truth conditions that the denotation of the subject is an element of that of the postcopular noun phrase, or vice versa in the case of quantification.

Specificational sentences, in contrast, are highly controversial, and there is no consensus about either their structure or their interpretation. In this case, the precopular noun phrase is a definite description, whereas the second is a name. The controversy around specificational sentences revolves around their interpretation on the one hand, and on their relation, in terms of both interpretation and structure, to predicational sentences on the other. The two leading analyses of specificational sentences that make up this controversy are the so-called 'predicate inversion' analysis and the individual concept analysis. According to the predicate inversion analysis, specificational sentences are inverted predicational sentences. Semantically, this analysis assumes that, as is commonly assumed for predicational copular clauses, specificational copular clauses involve a predicational and a referential/quantificational noun phrase. In specificational sentences, the precopular noun phrase is predicative, denoting a property of the things that the postcopular noun phrase refers to or quantifies over (Heggie 1988, Moro 1997, Mikkelsen 2005, Barros 2016). According to the individual concept analysis, specificational sentences have an altogether different interpretation from predicational sentences, with the precopular noun phrase denoting an individual concept ($\langle s, e \rangle$) (Romero

^{*}The order of authors is alphabetical. This paper grew out of a presentation at *Sinn und Bedeutung 18* at the University of the Basque Country in Gasteiz in September of 2013. We thank the audience there and Caroline Heycock for useful feedback and discussion.

2005), and the verb phrase expressing a property of individual concepts. A typical specificational sentence has the truth conditions that the concept denoted by the subject noun phrase has the property of concepts denoted by the verb phrase.

In the relevant literature, for a noun phrase to be "predicational" is for it to express property of individuals, which, type theoretically, means having type $\langle e, t \rangle$. A predicate inversion analysis of specificational clauses is one in which the postcopular noun phrase denotes an individual and the precopular noun phrase denotes a property of individuals. A specificational sentence is true if and only if the latter property is true of the former individual. English uncontroversially has sentences in which an expression denoting a property of individuals precedes the expression denoting the subject of predication, as for example in (2).

(2) And blessed is she that believed: for there shall be a performance of those things which were told her from the Lord. (Luke 1:45)

But (2) is an example of topicalization and not a specificational sentence on anyone's analysis. The controversial claim made by predicate inversion analyses of specificational sentences is that they involve the canonical syntax for copular sentences, but that their syntactic subjects denote predicates.

This paper advances three new arguments in favor of an individual concept analysis and against a predicate inversion analysis of specificational sentences. Our main claim is that specificational sentences are predicational: the precopular noun phrase refers to, or quantifies over, the things that the postcopular noun phrase denotes a property of. The former things, however, are not individuals, but individual concepts, and the latter properties are properties of individual concepts, specifically the property of having a certain value in the world of evaluation. The three arguments we present for the individual concept analysis of specificational sentences involve (verb phrase) coordination, quantificational specificational subjects, and the truth-conditional non-equivalence of specificational and predicational sentences. More specifically, we demonstrate the following three generalizations:

- 1. Specificational verb phrases can be coordinated with verb phrases that demonstrably denote properties of individual concepts.
- 2. Specificational sentences can demonstrably quantify over individual concepts.
- 3. Specificational sentences and their "uninverted" predicational counterparts are not generally truth conditionally equivalent.

None of these generalizations is readily captured by a predicate inversion analysis, but all three follow automatically from an individual concept analysis.

2 Specificational subjects

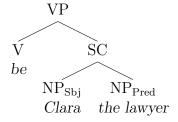
In this section we give an overview of the two analyses of specificational subjects, the Predicate Inversion Analysis and the Individual Concept Analysis.¹

¹Another analysis argues that specificational sentences are distinct from predicational ones and links them to equative clauses (Heycock and Kroch 1999, 2002, Rothstein 2001). Mikkelsen (2005) convincingly shows that the pre-copular constituent in specificational clauses is not of type e, so we do not entertain this analysis here.

2.1 Predicate Inversion

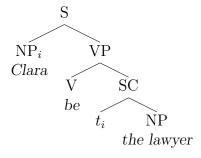
The first analysis in which specificational sentences involve raising of the predicate to a syntactic position above the subject dates back to Williams (1983), and has since become a very prominent account. This idea has been implemented in various ways in the literature, with all accounts sharing two basic assumptions: (i) predicational and specificational sentences have the same underlying structure, and (ii) the surface order of the two constituents in specificational sentences is the result of a syntactic movement operation, in which the underlying predicate raises to some position structurally higher than that of the subject (a.o. Partee (1986), Heggie (1988), Heycock (1991), Moro (1997), Adger and Ramchand (2003), Mikkelsen (2005), den Dikken (2006), Barros (2016)). Abstracting away from some of the details in different proposals, the derivation of both sentences in (3) would start out from the structure in (4).

- (3) a. Clara is the lawyer.
 - b. The lawyer is Clara.
- (4) Underlying structure for predicational and specificational sentences



The two NPs are generated in some type of a small clause (SC); for simplicity, we represent it here as symmetrical. In the predicational sentence in (3a), the small clause subject, *Clara*, moves to the structural subject position outside VP, as in (5).

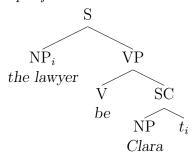
(5) Predicational sentence: SC subject moves



In the specificational sentence in (3b), it is the small clause predicate, the lawyer, raising to the VP-external subject position, yielding (6) and resulting in the apparent reversal of the order of the subject and the predicate.²

²Mikkelsen (2005) shows that Danish, a language with predicate topicalization, distinguishes such constructions from specificational sentences. The pre-copular position in specificational sentences is therefore not an A'-position, as proposed by Heggie (1988).

(6) Specificational sentence: SC predicate moves



2.2 Specificational subjects are individual concepts

Romero (2005) argues that specificational subjects are not predicates, but individual concepts. Her argument rests on the parallel between specificational subjects in sentences with the copular be and concealed question complements of uncontroversially intensional verbs such as the epistemic know, first described in Heim 1979, as in the example (7).

(7) Sara knows the price that Zoe knows.

The two readings for (7) can be paraphrased as follows:

- (8) a. Sara knows the same price that Zoe knows.
 - b. Sara knows what price Zoe knows.

Under reading (8a), the relevant questions about prices are, for example, *How much does* the milk cost?, How much does the oil cost?, How much does the ham cost?, and so on. Zoe knows the answer to one of these questions, for example the question about the price of milk. Sara also knows the answer to this question.

In addition to the questions about prices of different items (milk, oil, ham), there is also a meta-question associated with the sentence in (7), asking which of the questions Zoe knows the answer to. Under the reading (8b), Zoe again knows the answer to one of the relevant questions about prices, and Sara knows the answer to the meta-question, for example, she knows that Zoe knows how much milk costs. Sara does not, however, necessarily know the answer to that question herself.

Specificational sentences, Romero argues, display readings parallel to those of the concealed question complements of know, in that the subject of a specificational sentence can contribute either a question or a meta-question. Example (9) (Romero 2005, 712) has a reading comparable to reading (8a) of (7).

(9) The price that Zoe thought was 1.29 was (actually) 1.79.

Specifically, amongst the relevant questions such as *How much does the milk cost?*, *How much does the oil cost?*, etc., Zoe though the answer to one of them, for example the first one, was 1.29, but the actual answer is 1.79.

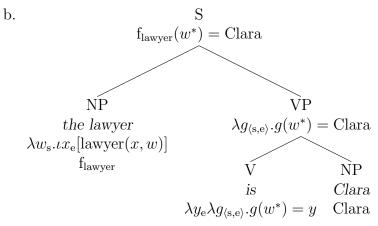
The following provides an example of a reading parallel to (8b):

(10) The price that Zoe thought was \$1.29 was the price of milk.

In this case, the metaquestion is which among the questions about the prices is the one whose answer Zoe thought was 1.29, and the answer to this metaquestion is the question of how much the milk costs.

According to Romero, then, the specificational subject denotes an individual concept, and the postcopular NP is its value in world of evaluation. The (simplified) syntax and semantics of the sentence in (11a) is given in (11b).

(11) a. The lawyer is Clara.



An objection that has been raised in the literature (see for example Caponigro and Heller 2007 and Barros 2016) against analyzing specificational subjects as concept denoting is that such subjects do not always pattern with concealed questions. However, this objection is moot, since an analysis of specificational subjects as concept denoting in no way commits us to analyzing them as concealed questions. The proper analysis of the latter is very much still an open issue (see Aloni and Roelofsen 2011 for discussion of the various proposals made in the literature), and whichever way it is resolved has no direct consequence for the analysis of specification.

In the following sections, we provide three novel arguments for this approach to specificational copular sentences.

3 Coordination

Our first argument comes from VP coordination. We show that specificational VPs can be coordinated with VPs that select for an individual concept subject, meaning that this subject must also be able to function as the subject of the specificational sentence.

We assume, following Partee and Rooth (1983), that coordination applies to constituents of the same semantic type. There are VPs of type $\langle se, t \rangle$ that select an individual concept as a subject, as shown in (12–13).

- (12) The temperature is rising.
- (13) The price of milk changes from state to state.

A specificational sentence with the same subject as the sentence in (12) is given in (14).

(14) The temperature is 30.

The VP in the specificational sentence, is 30, can be coordinated with VP that selects for the individual concept subject, is rising, as in (15).

(15) The temperature is 30 and is rising.

Similarly, (17) shows that the VP in the specicicational sentence (16) can be coordinated with the VP selecting for the individual concept subject from (13).

- (16) The price of milk is 3.99.
- (17) The price of milk is 3.99, but changes from state to state.

Under the assumption that the semantic type of the two VPs has to be the same, the grammaticality of (15) and (17) means that the subject of a specificational sentence denotes an individual concept. The predicate inversion analysis would predict these data to be ungrammatical, since the coordinated constituents would be of different semantic types, $\langle \text{et}, \text{t} \rangle$ (see section 5) and $\langle \text{se}, \text{t} \rangle$.

4 Quantificational specificational subjects

Mikkelsen (2005) presents an argument from quantification in favor of analyzing specificational subjects as inverted predicates. As she observes, if specificational sentences involve predicate inversion, and specificational subjects are predicates, then quantificational noun phrases are predicted to be barred from this position. As evidence that this prediction is borne out, Mikkelsen brings the example in (18).

(18) CONTEXT: A movie stars Liv Ullman and Ingrid Bergman, and they are the only actresses in the movie.

#Every actress in this movie is Liv Ullman or Ingrid Bergman.

Furthermore, she claims, the predicational counterparts of sentences like (18) should be just as bad as their inverted counterparts. That they are is demonstrated in (19).

(19) # Liv Ullman or Ingrid Bergman are every actress in that movie.

This section demonstrates that this argument from quantification does not go through, and that quantification in specificational clauses in fact points clearly towards the individual concept analysis. Quantificational subjects of specificational sentences simply quantify over individual concepts. That the grammar of at least English requires quantification over concepts was already pointed out independently by Romero (2008) in connection with the so-called "temperature paradox".

First, the alleged generalization that the subjects of specificational sentences cannot be quantificational is empirically false. Consider the examples in (21) and (22). If (20) is a specificational sentence, which we take to be uncontroversial, then (21) and (22) clearly involve quantificational specificational subjects.

(20) The price (of homemade Sauerkraut) is 3.99.

³For reasons we do not understand, coordination of this type is not always possible, as in *The president is Trump but luckily changes every 4 years.

- (21) Every price is 3.99.
- (22) Most prices are 3.99.

Intuitively, these sentences involve quantification over price concepts. For example, suppose a context in which (23) provides the state-regulated prices of various commodities.

(23)	flour:	\$3.99	sugar:	\$3.99
	bread:	\$1.99	milk:	\$2.99
	salt:	\$3.99	home made sauerkraut:	\$3.99

In this kind of scenario, (21) is false but (22) is true. It is not the case that every price is 3.99. For example, the price of milk is not. However, it is true that most of the prices, four out of six, are 3.99. One might perhaps argue that such sentences do not quantify over concepts, but over numbers. Yet this does not accord with intuitions. On such an account, both (21) and (22) would be false, since only one out of the three numbers involved (i.e. 3.99, 1.99 and 2.99) is 3.99.

An analysis of specificational subjects not as predicative but rather denoting, or quantifying over, individual concepts, accounts straightforwardly for such sentences. As an example, consider (21). We propose to analyze the subject noun phrase of this sentence as denoting a quantifier over price concepts. Deriving this denotation compositionally involves a nontrivial theoretical choice, namely where in the composition to introduce intensionality. One option is to let intensionality come from the noun itself, and analyze the noun price as denoting, either lexically, or as a result of a type shift, the set of all price concepts rather than the set of prices. An alternative would be to let the quantifier introduce intensionality. The choice between these options, both of which presumably have supporting as well as opposing arguments, is immaterial for our purposes. For simplicity, we assume, without argument, that intentionality is introduced lexically by the noun. Thus, we associate with the noun price the denotation of type $\langle \text{se}, \text{t} \rangle$ in (24), where for any concept f, price(f) if and only if the value of f in every world is a price.

(24)
$$[price] = \lambda f_{\langle s,e \rangle}[price(f)]$$

Similarly, on the assumption that quantificational determiners can combine with any setdenoting noun, we associate with the quantificational determiner *every* a denotation of a quantifier over concepts, of type $\langle \langle se, t \rangle, t \rangle$ as in (25).

(25)
$$\llbracket \text{every} \rrbracket = \lambda P_{\langle \text{se}, \text{t} \rangle} \lambda Q_{\langle \text{se}, \text{t} \rangle} [\forall f_{\langle \text{s}, \text{e} \rangle} : P(f) \to Q(f)]$$

The verb phrase, is 3.99 is then analyzed as a property of individual concepts, namely the property of being a concept whose value at the evaluation world is 3.99:

(26)
$$\forall f_{\langle s,e \rangle}[\mathbf{price}(f) \to f(w^*) = 3.99]$$

$$NP \qquad VP$$

$$every \ price \qquad is \ 3.99$$

$$\lambda P_{\langle se,t \rangle}.\forall f_{\langle s,e \rangle}[\mathbf{price}(f) \to P(f)] \quad \lambda g_{\langle s,e \rangle}.g(w^*) = 3.99$$

Applying the predicate to the subject then yields the desired truth conditions, namely that the set of (contextually relevant) price concepts is included in the set of concepts whose value at the world of utterance is 3.99.

A proponent of a predicate inversion view of specificational sentences might argue that our conclusions from (21) and (22) are hasty, and that in fact such sentences involve quantification over predicates. Just like, on a concept analysis, specificational subjects can both denote concepts and quantify over concepts, and just like noun phrases in argument position can generally both refer to individuals and quantify over them, so, on a predicate inversion analysis, they can denote, as well as quantify over, predicates. In other words, perhaps Mikkelsen's idea that specificational subjects are inverted predicative expressions is in fact perfectly compatible with their being quantified. After all, even noun phrases in predicative position can be quantificational, as in (27).

(27) Mary is everything Sue is.

The idea would be that the phrase everything Sue is quantifies over properties, and (27) says that every property that holds of Sue holds also of Mary. Specificational subject QPs could thus well be inverted quantified predicates. On such an analysis, the sentence in (21) says that for every property P such that P is the property of being the price of something, P holds of the price 3.99.

Analyzing specificational subjects as inverted quantifers over predicates is, however, not a viable option, for two reasons. The first is that those expressions that seem to quantify over predicates, as in (27), can clearly not function as specificational subjects, as can be seen by comparing (27) with what would be its inverted counterpart, (28).

(28) *Everything Sue is is Mary.

The second reason is the inverse of the first, namely that those quantified noun phrases that make good specificational subjects cannot occur as uninverted predicates in copular constructions, as shown by comparing (29) with (30).

(29) Every price is 3.99.

Specificational

(30) *3.99 is every price.

Predicational

This discussion establishes that specificational subjects can in fact be quantificational, and that when they are quantificational, they do not quantify over properties, but rather over concepts.

An analysis of quantificational specification subjects as quantifying over concepts also affords a more nuanced explanation for Mikkelsen's observation that (18) above, repeated here as (31), is semantically infelicitous.

(31) # Every actress in this movie is Liv Ullman or Ingrid Bergman.

The infelicity of the sentence can be linked to the observation that not all noun phrases lend themselves easily to a concept interpretation. For example, the noun phrase *actress in this movie* is easy to construe as describing a set of individuals (the set of women who act in this movie), but it is difficult to construe as a set of concepts, since there are no "actress concepts" that recur regularly across movies. For example, there is no stable function that,

for any movie m, yields the actress that plays Queen Mary in m. This line of explanation is supported by the observation that when the relevant noun phrase is changed to one that is easily construable as describing a set of concepts, the semantic infelicity disappears. For example, in (32), the noun phrase lead actress can easily be construed as a concept, since every film with a female lead role has exactly one lead actress, and the sentence is fully acceptable.

(32) Every lead actress in a 50s Scandinavian film is Liv Ullman or Ingrid Bergman.

The potentially complicated compositional issues aside, it is clear in this context that the quantificational determiner *every* is quantifying over the set of concepts described in (33) (where the variables x, y etc. range over 50s Scandinavian films), a set contributed by the noun phrase *lead actress in a 50s Scandinavian film*.

(33)
$$\begin{cases} \lambda w. \text{ the lead actress in } x \\ \lambda w. \text{ the lead actress in } y \\ \lambda w. \text{ the lead actress in } z \\ \dots \end{cases}$$

The sentence is true if and only if, for every concept f in the set in (33), the value of f in the actual world is either Ullman or Bergman.

5 Truth-conditional non-equivalence

In this section, we provide two additional arguments for the Individual Concept Analysis and against the Predicate Inversion analysis, based on the following prediction of the latter:

(34) Truth-conditional equivalence prediction of the Predicate Inversion Analysis

Specificational and predicational sentences are truth-conditionally equivalent, modulo whatever effects movement of the predicate to surface subject position may have
on semantic interpretation.

On the one hand, the prediction is straightforward: since a specificational sentence such as One of the prices is 3.99 has, by hypothesis, the same underlying structure as a predicational sentence (3.99 is one of the prices), the two should have equivalent meanings. On the other hand, the prediction is complicated by the fact that the hypothesized movement of the underlying predicate to surface subject position might have an effect on semantic interpretation. In presenting our arguments below, we take this complication into account, and show that this prediction is not borne out.

Our arguments are based on specificational sentences that contain either negation or scalar *only*. We argue that these elements interact with the basic components of copular sentences in a way that results in truth-conditional non-equivalence between specificational sentences and their predicational counterparts.

5.1 Negation

A negated specificational sentence containing an indefinite subject does not have the same truth conditions as its predicational counterpart:⁴

- (35) Truth-conditional non-equivalence: negation
 - a. Specificational: one-of-the-prices> \neg One of the prices is not 3.99.
 - b. $Predicational: \neg >$ one-of-the-prices 3.99 is not one of the prices.

This lack of equivalence, which can be described in terms of relative scope of the indefinite one of the prices and not, can be brought out, for instance, when describing the following list of prices:

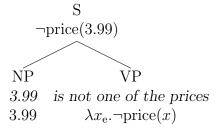
(36) List of prices at a store

flour: \$3.99 sugar: \$3.99 bread: \$3.99 milk: \$2.00 salt: \$3.99 pepper: \$3.99

Intuitively, specificational (35a) is true in this context, since one of the prices in the list, namely the price of milk, is \$3.99. However, predicational (35b) can only be true if none of the prices is \$3.99, which is patently false if the list of prices is the one above. In what follows, we argue that the Individual Concept Analysis derives this lack of equivalence, while the Predicate Inversion Analysis makes the wrong prediction.

Consider predicational (35b) first, whose account is the same under both analyses. Abstracting away from partitivity, which is irrelevant for our argument, one of the prices denotes the same $\langle e, t \rangle$ function as a price in predicate position (as in 3.99 is a price):

(37) 3.99 is not one of the prices.



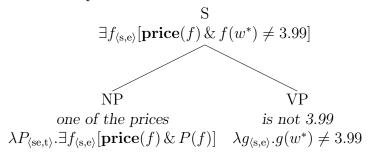
The sentence is thus true iff no price is 3.99, as desired.

The Individual Concept Analysis correctly derives different truth conditions for specificational (35a). Following the model of other quantificational specificational subjects in the previous section, one of the prices denotes an existential quantifier over price concepts:⁵

⁴In order to test this claim, we use examples with partitive NPs as specificational subjects, as this type of nominal meets several requirements imposed on the test. First, we need quantified NPs, in order to check their scope with respect to negation. Second, since one of the accounts we compare here is the Predicate Inversion Analysis, this NP also needs to be a possible predicate in predicational copular sentences. Third, as discussed, among others, in Mikkelsen 2005, many indefinites are ruled out as specificational subjects.

⁵As above, we abstract away from partitivity.

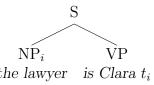
(38) One of the prices is not 3.99.



In combination with the negated VP is not 3.99, the analysis correctly derives that the sentence is true iff there is a price that is not 3.99.

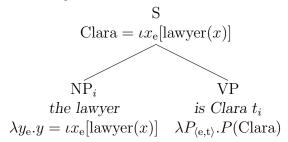
Testing the predictions of the Predicate Inversion Analysis with respect to the specificational sentence is highly dependent on an explicit semantic analysis of predicate inversion. One such analysis is provided in Barros 2016, and we base our argument below on a simplified version of this semantic account that abstracts away from elements that are not directly relevant. Under Prediate Inversion, specificational subjects denote functions of type $\langle e, t \rangle$, i.e. predicates. Like predicates in predicational sentences, they are generated in VP-internally, but move to subject position:

(39) The lawyer is Clara.



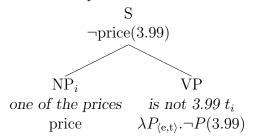
Since, by hypothesis, the moved element is of type $\langle e, t \rangle$, it is natural to assume that, as a result of the movement, the VP denotes a function from type $\langle e, t \rangle$ denotations to truth values:

(40) The lawyer is Clara.



In sentences with an indefinite subject and negation, such as (35a), this makes wrong predictions. By hypothesis, the specificational subject in (35a) has the same denotation as the predicate in (35b) (see discussion above (37)):

(41) One of the prices is not 3.99.



The predicted truth conditions are the same as the predicational sentence (see (37)), contrary to fact.

Under the semantics we have adopted for predicate inversion, movement of a predicate has no semantic effect, which leads to the wrong prediction discussed above. One might thus be tempted to explore an alternative in which predicate movement does have an effect on meaning, in the hope of deriving truth-conditional equivalence between specificational sentences and their predicational counterparts. We believe that this is not a viable option, since, more generally, movement of predicates has been shown to not have semantic effects (Huang 1993, Heycock 1995).

5.2 Scalar only

The truth-conditional (non-)equivalence of specificational and predicational sentences can also be tested with *only*. We observe that *only* has a scalar reading in the predicate of specificational sentences that is absent in the subject of the corresponding predicational sentences:

- (42) a. Scalar only in specificational sentences One of the prices is only 3.99
 - b. No scalar only in predicational sentences Only 3.99 is one of the prices.

Under the scalar reading, specificational (42a) is true if and only if there is a price p such that p is 3.99 and no higher.⁶ This reading is not available to predicational (42b). This difference between the two types of copular sentences is confirmed by replacing *only* with *just*, which only allows a scalar reading, or what Horn (2000) calls the rank-order reading (see Coppock and Beaver 2014 for recent discussion and analysis):

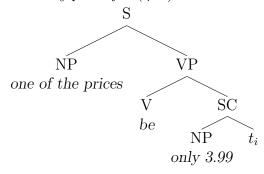
- (43) a. One of the prices is just 3.99.
 - b. *Just 3.99 is one of the prices.

We argue in this subsection that the Individual Concept Analysis predicts the scalar reading for the specificational sentence, but the Predicate Inversion Analysis does not.

Consider the predictions of Predicate Inversion first. Because *only* can attach to constituents of different categories, specificational (42a) has two possible underlying sources. The most transparent one involves attachment of *only* to the NP 3.99:

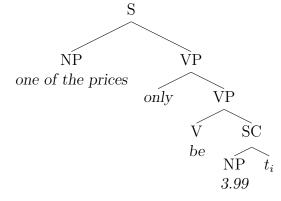
 $^{^6}$ Another component of the meaning is that 3.99 is low on the scale of prices. We abstract away from this in our analysis.

(44) NP-only parse for (42a) under Predicate Inversion



However, (42a) can also be the result of only attaching to VP:

(45) VP-only parse for (42a) under Predicate Inversion



Because finite forms of be surface to the immediate left of left-edge VP modifiers, the surface order is is only, not only is.

We can easily rule out the NP-only parse as the analysis of the scalar reading of (42a), since its predicational counterpart (42b) does not have one. More generally, it seems that scalar readings are available when only attaches to predicates, but not when it attaches to arguments:

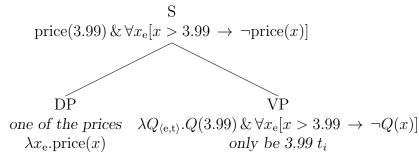
- (46) a. VP-only: scalar reading
 She only hired a janitor.
 - b. *DP*-only: no scalar reading
 She hired only a janitor.

Although *only* associates with *a janitor* in both sentences, the scalar reading (associated with the inference that she did not hire someone of higher status) is only available under VP attachment.

Thus, the only potential source for the scalar reading of (42a) under the Predicate Inversion Analysis is (45). However, this does not derive the correct scalar reading:⁷

⁷The denotation assumed for the VP is the same as the VP in *One of the prices is 3.99* under the Predicate Inversion Analysis, but modified by scalar *only* (which introduces the second conjunct in the denotation). It is immaterial for our purposes how this is done compositionally.

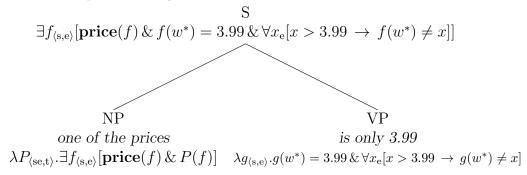
(47) One of the prices is only 3.99.



The specific prediction is that the sentence is true iff 3.99 is the highest price, but the sentence does not have this scalar reading.

On the other hand, the correct truth conditions are derived under the Individual Concept Analysis:

(48) One of the prices is only 3.99.



The denotation of the subject is the same as the one assumed in the previous subsection, and the denotation of the VP incorporates (in the second conjunct) the contribution of scalar only. In this analysis, the sentence is predicted to be true iff there is a price concept f such that f is 3.99 in the world of evaluation, and no number higher than 3.99 is f in the world of evaluation. This is equivalent to the truth conditions described for the sentence at the beginning of the subsection.

6 Conclusion

In this paper, we provided three new, and to our mind decisive, arguments for the Individual Concept Analysis of specificational copular sentences and against their analysis in terms of predicate inversion. First, the fact that specificational VPs can be coordinated with (non-copular) VPs that select for individual concept denoting subjects shows that specificational subjects denote individual concepts. Second, specificational sentences can have quantified noun phrases in subject position and, furthermore, we have demonstrated that they quantify over individual concepts, not predicates. Finally, the Predicate Inversion Analysis makes false predictions about truth conditions. Specifically, that analysis predicts (and is indeed premised on) truth-conditional equivalence between specificational sentences and their predicational counterparts, a prediction falsified by the behavior of copular sentences containing negation and scalar *only*. The Individual Concept Analysis, in contrast, predicts exactly

the truth conditional behavior actually observed. We conclude that specificational subjects denote individual concepts, not (inverted) predicates. This result is a welcome one, as it provides a far more natural picture of the grammar of copular sentences. All copular sentences, on this picture, involve a syntactic subject noun phrase that denotes (or quantifies over) something of which the copular verb phrase denotes a property. In the case of regular "predicational" sentences, the subject noun phrase denotes (or quantifies over) individuals and the copular verb phrase denotes a property of individuals. In "specificational" sentences, the subject noun phrase denotes (or quantifies over) individual concepts, and the copular verb phrase denotes a property of individual concepts. In essence, therefore, our analysis simplifies the syntactic typology of copular sentences significantly, reducing the structure of specificational sentences to that of predicational ones.

References

- Adger, David, and Gillian Ramchand. 2003. Predication and equation. *Linguistic Inquiry* 34:325–359.
- Aloni, Maria, and Floris Roelofsen. 2011. Interpreting concealed questions. *Linguistics and Philosophy* 34:443–478.
- Barros, Matthew. 2016. Specification as an intertaxonomic phenomenon. Ms., Yale University. Available at http://ling.auf.net/lingbuzz/repo/semanticsArchive/article/001575.
- Caponigro, Ivano, and Daphna Heller. 2007. The non-concealed nature of free relatives: Implications for connectivity in specificational sentences. In *Direct compositionality*, ed. Chris Barker and Pauline Jacobson, 237–263. Oxford: Oxford University Press.
- Coppock, Elizabeth, and David Beaver. 2014. Principles of the exclusive muddle. *Journal of Semantics* 31:371–432.
- den Dikken, Marcel. 2006. Relators and linkers: The syntax of predication, predicate inversion, and copulas. Cambridge, Mass.: MIT Press.
- Heggie, Lorie. 1988. The syntax of copular structures. Doctoral Dissertation, University of Southern California, Los Angeles.
- Heim, Irene. 1979. Concealed questions. In Semantics from different points of view, ed. Rainer Bäuerle, Urs Egli, and Arnim von Stechow, 51–60. Berlin: Springer-Verlag.
- Heycock, Caroline. 1991. Layers of predication: the non-lexical syntax of clauses. Doctoral Dissertation, University of Pennsylvania. Published in 1994 in the *Outstanding dissertations in linguistics* series. New York: Garland.
- Heycock, Caroline. 1995. Asymmetries in reconstruction. Linguistic Inquiry 26:547–570.
- Heycock, Caroline, and Anthony Kroch. 1999. Pseudocleft connectedness: Implications for the LF interface level. *Linguistic Inquiry* 30:365–397.
- Heycock, Caroline, and Anthony Kroch. 2002. Topic, focus, and syntactic representations. In *Proceedings of the 21st West Coast Conference on Formal Linguistics*, ed. Line Mikkelsen and Christopher Potts, 101–125. Somerville, Mass.: Cascadilla.
- Higgins, F. Roger. 1973. The pseudo-cleft construction in English. Doctoral Dissertation, Massachusetts Institute of Technology, Cambridge, Mass.
- Horn, Lawrence. 2000. Pick a theory (not just any theory): Indiscriminatives and the

- free-choice indefinite. In Negation and polarity: Syntactic and semantic perspectives, ed. Lawrence Horn and Yasuhiko Kato, 147–193. Oxford: Oxford University Press.
- Huang, C.-T. James. 1993. Reconstruction and the structure of VP: Some theoretical consequences. *Linguistic Inquiry* 24:103–138.
- Mikkelsen, Line. 2005. Copular clauses: Specification, predication and equation. Amsterdam: John Benjamins.
- Moro, Andrea. 1997. The raising of predicates: Predicative noun phrases and the theory of clause structure. Cambridge: Cambridge University Press.
- Partee, Barbara. 1986. Ambiguous pseudoclefts with unambiguous be. In Proceedings of NELS 16, ed. S. Berman, J. Choe, and J. McDonough, 354–366. Amherst, MA: GLSA.
- Partee, Barbara, and Mats Rooth. 1983. Generalized conjunction and type ambiguity. In *Meaning, use, and interpretation of language*, ed. Rainer Bäuerle, 361–383. Berlin: de Gruyter.
- Romero, Maribel. 2005. Concealed questions and specificational subjects. *Linguistics and Philosophy* 28:687–737.
- Romero, Maribel. 2008. The temperature paradox and temporal interpretation. *Linguistic Inquiry* 39:655–667.
- Rothstein, Susan. 2001. Predicates and their Subjects. Dordrecht: Kluwer.
- Williams, Edwin. 1983. Semantic vs. syntactic categories. *Linguistics and Philosophy* 6:423–446.