

Why propositions might be sets of truth-supporting circumstances

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Abstract

Soames (1987, 2008) has argued that propositions cannot be sets of truth-supporting circumstances. This argument is criticized for assuming that various singular terms are directly referential when in fact there are good grounds to doubt this.

1 Introduction

By *proposition* I mean the semantic value of a declarative sentence, whether such a sentence appears in isolation or as the complement of an operator such as a propositional attitude verb.¹ I will be concentrating in this article on the rivalry between theories according to which propositions are structured entities (Russell 1903) and theories according to which propositions are unstructured sets of truth-supporting circumstances (Montague 1969, Stalnaker 1976, Barwise and Perry 1983), whether possible worlds or situations.² In particular, I will argue that an influential argument by Soames (1987, 2008) to the effect that propositions cannot be sets of circumstances is not sound.³

2 Soames's Argument

Soames (1987) argues that propositions cannot be sets of truth-supporting circumstances. His argument is a *reductio ad absurdum*.

We start with four initial assumptions. In A2, v is an arbitrary propositional attitude verb that denotes relation R .

- (A1) The semantic content of a sentence (relative to a context) is the collection of circumstances supporting its truth (as used in the context).

- (A2) Propositional attitude sentences report relations to the semantic contents of their complements — i.e. an individual i satisfies 'x vs that S' (relative to a context C) iff i bears R to the semantic content of S (relative to C).
- (A3) Many propositional attitude verbs, including 'say', 'assert', 'believe', 'know', and 'prove' distribute over conjunction.
- (A4) Names, indexicals and variables are directly referential.

We also need a weak principle of compositionality:

Com If S_1 and S_2 are non-intensional sentences or formulas with the same grammatical structure, which differ only in the substitution of constituents with the same semantic contents (relative to their respective contexts and assignments), then the semantic contents of S_1 and S_2 will be the same (relative to those contexts and assignments).

Soames now attempts to show that an absurdity follows from these assumptions. We begin with statement B1, which is meant to be uncontroversial, and then derive the subsequent propositions by means of the axioms shown.

- (B1) The ancients believed that 'Hesperus' referred to Hesperus and 'Phosphorus' referred to Phosphorus.
- (B2) The ancients believed that 'Hesperus' referred to Hesperus and 'Phosphorus' referred to Hesperus. (By A1, A2, A4 and Com)
- (B3) The ancients believed that 'Hesperus' referred to Hesperus and 'Phosphorus' referred to Hesperus and for some x , 'Hesperus' referred to x and 'Phosphorus' referred to x . (By A1 and A2)
- (B4) The ancients believed that for some x , 'Hesperus' referred to x and 'Phosphorus' referred to x . (By A3)

We have now derived an absurdity, or at least a proposition known not to be true of the relevant ancients. So one of our original assumptions must be false. Soames says it must be A1.

What if we are tempted to abandon direct reference (A4) for names, at least in 'Hesperus'/'Phosphorus' cases? Soames says that this would do us no good unless we are willing to abandon direct reference everywhere, even for demonstratives and pronouns. We could rerun the argument as follows:⁴

- (C1) The ancients believed that 'Phosphorus' referred to this (*pointing in the morning to Venus*) and (*speaking very slowly*) 'Hesperus' referred to that (*pointing in the evening to Venus*).

- (C2) The ancients believed that ‘Hesperus’ referred to this (*pointing in the evening to Venus*) and ‘Phosphorus’ referred to this (*pointing in the evening to Venus*).
(By A1, A2, A4 and Com)
- (C3) The ancients believed that ‘Hesperus’ referred to this (*pointing in the evening to Venus*) and ‘Phosphorus’ referred to this (*pointing in the evening to Venus*) and for some x , ‘Hesperus’ referred to x and ‘Phosphorus’ referred to x .
(By A1 and A2)
- (C4) The ancients believed that for some x , ‘Hesperus’ referred to x and ‘Phosphorus’ referred to x .
(By A3)

Soames also claims that it is possible to run a version of the argument using the variables x and y . D1 and D2 are supposed to be true, but the above assumptions are supposed to allow the derivation of the false D3 and D4 as shown.

- (D1) There is a planet x which is seen in the morning sky and a planet y which is seen in the evening sky and the ancients believed that x was seen in the morning sky and y was seen in the evening sky.
- (D2) The planet seen in the morning sky is the planet seen in the evening sky.
- (D3) There is a planet x and a planet y such that the ancients believed the following: that x was seen in the morning sky and y was seen in the evening sky and there was something which was both seen in the morning sky and seen in the evening sky.
(By A1, A2, A4 and Com)
- (D4) The ancients believed that there was something which was both seen in the morning sky and seen in the evening sky.
(By A3)

Since nothing needed to be stipulated about the kind of truth-supporting circumstances that we were dealing with in these arguments, Soames takes it that these arguments present a problem for situation semantics (Barwise and Perry 1983) as well as semantic systems based on possible worlds.

3 An Argument Against

3.1 Summary

My response to the above arguments can be summarized briefly: we cannot be sure that devices from artificial languages (like the variables x and y) behave in the way that their semantics in the artificial languages would suggest when they are coopted and used in sentences of natural languages; there is a growing consensus among researchers on demonstratives and pronouns that these items are not (or

at least are not always) directly referential; and there are excellent reasons apart from the ‘Hesperus’/‘Phosphorus’ cases themselves to believe that names are not always directly referential. In sum, there are good grounds for rejecting A4, which in turn makes it unnecessary to reject A1.

3.2 Variables

Let us start with D1-D4, the version of the argument that uses the variables x and y . Soames evidently means us to understand these as variables of type e , as they would be if they appeared in a version of first-order logic. But they do not appear in a version of first-order logic in his argument. They appear in English sentences. Or, rather, they appear in strings whose status is uncertain, since they appear to be composed of a mixture of English words and symbols from first-order logic. How speakers of English (even philosophically corrupted ones) actually treat x and y when they appear in quasi-English sentences of this kind is surely an open empirical question (a rather recondite one) in natural language semantics. We cannot just stipulate the answer.

To give a flavor of the kind of complications that might arise in investigating this question, consider that many semanticists, from Montague (1973) on down, have proposed that singular terms in English actually denote (type-lifted versions of) individual concepts, rather than individuals. This hypothesis has found empirical support in various areas of natural language semantics, including the construction of semantically sophisticated versions of Chomsky’s (1981) binding theory (Heim 1998, Büring 2005) and the analysis of donkey anaphora (Heim 1990; Elbourne 2001, 2005; Büring 2004). If the hypothesis is correct, then presumably ‘ x ’ in D1, for example, will be treated as an individual concept. But which one? It might be treated as a function that relies on an assignment function to provide an object o and then maps truth-supporting circumstances to o . In other words, it might be treated in a way that would enable an analogue of Soames’s argument to be run. But, on the other hand, it might not. In the context of D1, it might be treated as a function that takes truth-supporting circumstances s and maps them to the most conspicuous planet seen in the morning sky in s , if there is such a planet. The answer would depend on the exact nature of the individual concepts used in natural language and on the exact nature of the process that takes symbols like x and interprets them as individual concepts when they appear in the middle of an English sentence.

Even if English singular terms turn out not to be individual concepts, it is still far from certain that x and y , as they appear in D1-D4, are treated by English speakers as individual variables. ‘There is a planet x which is seen in the morning sky’ might, for all we know, be analyzed as if it were ‘There is a planet, x by name,

which is seen in the morning sky.’ If this were the case, this kind of example would collapse into the kind of example that uses names. There might be other possibilities too, of course. In advance of serious empirical investigation, it is hard to tell. But, to repeat, we cannot be sure that devices from artificial languages behave in the way that their semantics in the artificial languages would suggest when they are coopted and used in sentences of natural languages.

3.3 Pronouns and Demonstratives

There is a growing consensus among researchers on natural language semantics that pronouns and demonstratives are not (or at least are not always) directly referential. In fact there is good evidence that these items, at least sometimes, are interpreted as definite descriptions. I will first summarize some evidence for thinking that pronouns are definite descriptions, and then describe the (actually very similar) evidence for thinking the same of demonstratives.

There is a substantial amount of evidence to indicate that pronouns are interpreted as definite descriptions. I will here mention two pieces.⁵ The first relevant phenomenon is that of donkey anaphora. As pointed out by Geach (1962), who was drawing on the work of the medieval logicians, the pronoun in sentences like E1 and E2 has a covarying interpretation but is not in the scope of its apparent antecedent ‘a donkey’:

(E1) Every man who owns a donkey beats it.

(E2) If a man owns a donkey, he beats it.

Evans (1977) argued that these pronouns were referential and had their reference *fixed* by contextually recoverable definite descriptions; but Davies (1981) convincingly argued that this theory was inadequate and that a theory according to which donkey pronouns *were* contextually recoverable definite descriptions was preferable. So E1 would mean the same as F1 or (the covarying reading of) F2, depending on exactly how the relevant definite description is reconstructed from the context:

(F1) Every man who owns a donkey beats the donkey he owns.

(F2) Every man who owns a donkey beats the donkey.

This theory has been supported by Cooper (1979), Heim (1990), Neale (1990) and Elbourne (2001, 2005), among others.⁶

It might be argued that donkey anaphora is an insufficiently close parallel to the kind of usage of singular terms envisaged in the arguments by Soames (1987). It would be possible to stipulate that pronouns are interpreted as definite descriptions *only* when they are anaphorically linked to, but not in the scope of, an indefinite antecedent. Indeed, Neale (1990) seems to suggest something along these

lines. But this lays the theorist open to the charge of introducing an undesirable ambiguity in pronouns. No language seems to have different forms for referential pronouns and donkey pronouns; so rather than say that pronouns are sometimes referential and sometimes definite descriptions, it is more satisfying to say that pronouns are always definite descriptions and that apparent referential uses involve trivial descriptive conditions like ‘identical to *a*’, where *a* is a name of some object (Elbourne 2005). But then it is hard to be sure on any given occasion that a pronoun does not involve a non-trivial descriptive condition.

But there are also some descriptive uses of pronouns that constitute very close parallels to the kind of uses envisaged by Soames (1987), some of whose examples (C1–C4) involve pointing to some salient object that is used to provide an interpretation for a singular term. We are now dealing with the second reason for thinking that pronouns are definite descriptions, which is the existence of the cases sometimes called *descriptive indexicals* (Nunberg 1993, Recanati 1993, Nunberg 2004, Recanati 2005—the term is Recanati’s, but the pioneering work in this area was done by Nunberg). To adapt an example from Recanati 2005, credited to Nunberg, suppose I point at Benedict XVI and say G1:

(G1) He is usually an Italian.

(G2) The Pope is usually an Italian.

(G3) Benedict XVI is usually an Italian.

It is obvious that I will be interpreted as saying that *the Pope* is usually an Italian; I will not be interpreted as saying that Benedict XVI is usually an Italian. G1, in this context, is synonymous with G2, not with G3. Note that we cannot explain this example by claiming that ‘he’ has Benedict XVI as its semantic value and that the descriptive meaning is derived from this by some kind of pragmatic process; if that were the case, we would expect an utterance of G3 to have the same reading. The name ‘Benedict XVI’ will presumably introduce Benedict XVI into the proposition expressed (assuming direct reference, with Soames), on which basis the putative pragmatic process that is supposed to produce the meaning of G1 should surely be able to operate; but G3 cannot have the meaning of G1, causing a grave difficulty for any attempt to explain away descriptive indexicals on the basis of direct reference and pragmatics (Nunberg 1993, 2004). It should be clear, moreover, that this kind of example forms a very close parallel with Soames’s C1–C4.

Exact analogues of the above descriptive interpretations of pronouns can be found with demonstratives (Elbourne forthcoming). Here are some examples of donkey anaphoric bare and complex demonstratives:

(H1) Every man who owns a donkey beats that donkey.

(H2) Every man who owns a donkey beats that and nothing else.

And here are two examples of demonstratives being used as descriptive indexicals, taken from Nunberg 1993 and Elbourne forthcoming (the latter based on an example in Jacobson 2000):

(I1) *(We are in the offices of a very hierarchical company that prescribes different kinds of office furniture for employees of different ranks, with low-quality accoutrements being prescribed for low-ranked workers. Pointing at the desk of a particularly lowly employee, I say the following.)* According to the regulations, that must always be made of metal.

(I2) *(A new faculty member picks up her first paycheck from her mailbox. Waving it in the air, she says the following to a colleague.)* Do most faculty members deposit this in the Credit Union?

As Nunberg (1993: 28) says, it seems that ‘that’ in I1 means something like ‘the desk used by an employee of grade 10 or below’. And in I2, ‘this’ means something like ‘their paycheck’, with ‘their’ bound by ‘most faculty members’. Again, the potential relevance to Soames’s C1–C4 should be obvious.

A group of examples possibly related to descriptive indexicals are King’s (2001) cases of demonstratives being used with ‘no demonstration, no speaker reference’. King (2001: 2) introduces the relevant class of uses as follows:

there are uses of ‘that’ phrases in which they are not accompanied by any demonstration, need not be used to talk about something present in the physical context of utterance, and in which the speaker has no particular individual in mind as “the thing she intends to talk about by means of the ‘that’ phrase.”

Some examples, based closely on King’s, are the following.

(J1) *(We heard a while ago that exactly one student scored 100 on the exam, but we do not know who it is.)* That student who scored 100 on the exam is a genius.

(J2) *(We heard a few seconds ago that exactly one student scored 100 on the exam, but we do not know who it is.)* This student who scored 100 on the exam is a genius.

As King says, this kind of case precludes a direct reference analysis. King (2001) himself proposes a treatment of complex demonstratives that assimilates them closely to Russellian definite descriptions.

In fact, out of the three studies of demonstratives I know of that take a wide range of data into account, all three conclude that demonstratives are definite descriptions, although they differ in their analysis of definite descriptions: King

(2001), as just mentioned, produces an analysis that recalls Russellian definite descriptions; Roberts (2002) analyzes demonstratives as definites in a Heimian dynamic semantics; and Elbourne (forthcoming) analyzes both definite descriptions and bare and complex demonstratives as individual concepts in a situation semantics. The days are long gone when one could safely assume that demonstratives were always directly referential.

3.4 Names

Of all the categories considered in this article, names have perhaps been subject to the best-known analyses that eschew direct reference. These analyses begin with Frege's (1892) theory of sense and continue throughout the Twentieth Century and up to the present day, in numbers too great to cite. Furthermore, as is well known, some of the examples adduced by Frege to argue for his dimension of sense are strikingly similar to the 'Hesperus'/'Phosphorus' examples in B1-B4, making it a bold move on Soames's part to use the thesis that these names in particular are directly referential. Overall, I think it would be fair to sum up the current state of the debate as follows: although Kripke's (1980) modal and other objections to descriptive theories of names are powerful, it is by no means obvious that they cannot be overcome, for instance by analyzing names as rigidified descriptions (Stanley 1997) or by including as part of the descriptive content of some uses of names a condition like 'identical to *a*' (Burge 1973, Elbourne 2005), where *a* is a Russellian logically proper name of some individual; and there is little or no consensus on what methods should be used by the advocates of the Millian analysis to overcome the original problems for it that Frege (1892) brought to light (Braun 2006). Even Soames himself (2005: 353) admits that 'the traditional problems for directly referential accounts of names posed by descriptivists like Frege and Russell have not been fully resolved.' Given this state of affairs, the presumption that names are directly referential is surely not one on which it is safe to base an argument.⁷

It is tempting to leave the matter there. But before I leave this topic I would like to highlight one fairly recent argument to the effect that names are not always directly referential that is not yet well known. This is the claim by Elbourne (2005: 181-183) to the effect that there are natural-sounding examples of covarying proper names:⁸

- (K1) Every woman who has a husband called 'John' and a lover called 'Gerontius' takes only Gerontius to the Rare Names Convention.
- (K2) If John insists on calling his next son 'Gerontius', then his wife will be annoyed and Gerontius will get made fun of because of his name.

The second occurrence of 'Gerontius' in K1 is not a mere mention of the name, unlike the first occurrence. But it is clearly not directly referential. It seems to range over various men of this name. Since it is apparently anaphorically linked to an indefinite ('a lover called "Gerontius"') that does not have scope over it, it is technically a donkey anaphoric proper name. Elbourne analyzes it as a definite description meaning 'the person called "Gerontius"', following the metalinguistic hypothesis of Burge (1973).

As for K2, Elbourne maintains that it is clear to our intuitions that John could have various people as his next son. He could have his next son with any one of a number of different women, for one thing. So the second occurrence of 'Gerontius' in K2 has to denote different people in different possible worlds. So it seems that it cannot be directly referential or even a rigid designator, in opposition to the well known claims of Kripke (1980) and Soames (2002).

I think it likely, then, that K1 and K2 constitute direct counterexamples to the claim that names are directly referential. But even without these examples, a dispassionate assessment of the state of the debate surrounding proper names reveals that direct reference is not so well established that it can provide a firm foundation to arguments in other areas.

4 Conclusion

Soames's (1987) argument requires that the following condition hold of some category of singular term: either items of that category are always directly referential; or they can be shown to be directly referential in the kind of examples used. But this condition does not hold of any category of singular term used in natural language. So the argument in question is not sound.

Notes

¹Following King (2003), I dismiss the possibility that the same kind of thing might not be appropriate as the semantic value of a declarative sentence when it appears in isolation and when it appears as the complement of an attitude verb.

²According to the lore in Stalnaker 1978, the idea that propositions are sets of truth-supporting circumstances was first suggested by Saul Kripke in the early 1960s.

³Edelberg (1994) has launched a separate criticism against Soames's argument, provoking a response from Soames (2008). I do not wish to enter the debate over Edelberg's criticism of Soames in this article.

⁴Soames does not give a version of his argument that uses pronouns in the crucial places. One possible difficulty is that the pronoun ‘it’ cannot be used in place of ‘this’ and ‘that’ in C1–C4. It is very awkward to say ‘The ancients believed that “Phosphorus” referred to it (*pointing in the morning to Venus*) and (*speaking very slowly*) “Hesperus” referred to it (*pointing in the evening to Venus*).’ But we can turn to Schiffer’s (1992) example of the Morning Dog and the Evening Dog and say quite felicitously ‘Ralph believes that “Fido” refers to him (*pointing in the morning to Fido*) and “Fi Fi” refers to him (*pointing in the evening to Fido*).’ It helps if slight focal stress is placed on ‘him’. Thus I will assume in what follows that Soames’s argument can indeed be run with pronouns, as he implies.

⁵For a third piece of evidence, see the discussion of Binding Theory in Heim 1998 already alluded to. Heim assumes that definite descriptions are individual concepts.

⁶Two other theories of donkey anaphora are prominent in the literature. According to Jacobson (2000) and Barker and Shan (2008), pronouns in general, and donkey pronouns in particular, denote the identity function over individuals and are subject to type-shifting procedures. This obviously does not help the cause of direct reference. Groenendijk and Stokhof (1990, 1991) and van Eijck and Kamp (1997) claim that scope assignment works rather differently than had been thought and that donkey pronouns are in fact bound individual variables; but this line of attack is subject to the problems detailed in Elbourne 2005.

⁷We should also note that if the currently influential theories of two-dimensional semantics (Chalmers 2006) are on the right lines, then names are not directly referential, at least in attitude contexts. Soames (2005) has argued against such theories; but see Chalmers 2008 for a reply. It should be noted, however, that Chalmers (2008) advocates the use of structured Russellian propositions in his own account of propositional attitude ascription.

⁸An example of a donkey anaphoric proper name has also been alleged by Geurts (1997: 321, example 6b), but, as Geurts himself acknowledges (1997: 322), many people find his particular example rather unnatural. I also find his amended example (7a) (1997: 322) rather awkward.

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