The Problem of Distinguishable Particants

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1 Two Problems for D-type Theory

D-type theories of donkey pronouns maintain that donkey pronouns are to be interpreted as definite descriptions. Since D-type theories analyze donkey pronouns as definite descriptions, they inherit the complications that are associated with giving an adequate semantics for definite descriptions. In particular, they inherit the problem of explaining away *prima facie* untoward uniqueness presuppostions. For example, consider the following due to Hans Kamp and its (rough and ready) D-type theory paraphrase.

(1) If a bishop meets a bishop, he blesses him.

(2) If a bishop meets a bishop, the bishop blesses the bishop.

The intuitive reading of (1) is that when two bishops meet, they bless each other. However, (2) does not seem to be able to capture this reading. The uniqueness presuppositions of the definite descriptions in the consequent of (2) require that there be only one bishop, not two. But this understates the problem. (2) is not just your everyday instance of the problem of incomplete definite descriptions. Suppose there is a way to satisfy the uniqueness presupposition of the first occurrence of *the bishop* in (2). Presumedly, such a method should equally apply to the second occurrence of *the bishop* such that whatever descriptive material is added to the first occurrence in order to satisfy its uniqueness presupposition must also be added to the second occurrence and vice versa.[1] In short, there seems to

[1]The reason for this presumption is that MEETS is a symmetric relation and the lack of distinguishing descriptive material in the antendent.

be no way to distinguish one bishop from another bishop so that D-type theory can capture the intuitive reading of (1). Heim (1990) dubs this *the problem of indistinguishable participants*. We will say more about this problem below.

The problem of indistinguishable participants is a well-known problem for D-type theorists. But I think that there is a variant of it that poses even a greater threat to D-type theory and, so far as I know, has not been recognized. Consider (3).

(3) If a bishop is the same height as a bishop, then he loves him.

It seems to me that the intuitive reading of (3) is that if two bishops are the same height as each other, then they bless each other. Thus, (3) seems to be an instance of the problem of indistinguishable participants. So, any solution to the problem posed by (1) should apply to (3) as well. However, this is not the case. The reason why this is not the case is that the intuitive reading of (3) does not get the truth conditions of (3) correct. (3) is true only if every bishop that is the same height as himself is such that he loves himself. In other words, if a bishop does not love himself, (3) is false. The reason for this is that IS-THE-SAME-HEIGHT-AS is a symmetric and *reflexive* relation. Thus, (3) is true if and only if (4a) and (4b).

(4) a. If a bishop is the same height as himself, then he loves himself.

b. If two bishops are of the same height, then they love each other.

But now suppose that that there is a solution to the problem of indistinguishable participants. That is, suppose that the D-theorist can account for truth condition (4b). It seems to follow that in order to account for truth condition (4a), the D-theorist must distinguish a bishop from himself. This is quite odd. In fact, it seems impossible to me. Thus, a solution to the problem of indistinguishable participants seems to give rise to a new problem. Let's call it *the problem of distinguishable particpants*. We will say more about this problem below.

The purpose of this paper is to argue that two attempts to solve the problem of indistinguishable participants fail. My argument, in short, is that both purported solutions give rise to the problem of distinguishable participants. The two attempts we are going evaluate at are Ludlow's (1994) thematic role D-type theory and Elbourne's (2005) situation based D-type theory. The reason I have chosen just these two theories is that there are not many attempts to solve the problem of indistinguishable participants. I follow Elbourne (2005) in narrowing down the list of plausible theories to just Elbourne (2005), Ludlow (1994), and Neale (1990). The reason I ignore Neale (1990) is that I believe Elbourne (2005) has

given a devastating argument, independent of any arguments offered in this paper, against Neale's attempted solution.[2] While I only argue against these two particular solutions, I do conjecture that my arguments generalize to any thematic role D-type theory or situation based D-type theory. Of course, further research may provide a way around my arguments.[3] But, I argue, such prospects look dim; hence, my conjecture.

The plan of the paper is as follows. First, I will show how D-type theory's commitment to uniqueness presuppostions gives rise to the problem of indistinguishable participants. As my foil, I will use Heim's (1990) situation based D-type theory. Second, I will outline Elbourne's (2005) D-type theory and overview his argument that appealing to situations can solve the problem of indistinguishable participants. Third, I will show that Elbourne's solution to the problem of indistinguishable participants fails. Forth, I will outline Ludlow's (1994) thematic role solution and show that his attempt fails as well. Lastly, I will say a brief word on to what extent my arguments generalize.

2 Problems with Uniqueness

2.1 A simple illustration

The feature that all D-type theories share is that donkey pronouns are to be interpreted as definite descriptions. All agree that the meaning of (5) can be roughly characterized as in (6).

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

(6) Every x such that x is a man who owns a donkey beats the donkey owned by x.

Without going into the details of any particular D-type theory, it seems that we can already raise a fatal objection to its account of donkey anaphora. Suppose that one has a Fregean account of definite descriptions according to which uniqueness is presupposed. One would expect donkey pronouns to carry uniqueness presuppositions as well, if D-type theory is correct. But consider (7) and (8), which are variants of examples in Heim (1982).

(7) If a man is from North Dakota, he likes the Vikings.

[2] See Elbourne (2005), p. 138-140.

[3] Thanks to Paul Elbourne for stressing this point to me.

(8) If a man is from North Dakota, the (unique) man from North Dakota likes the Vikings.

(8) is a D-type paraphrase of (7). In (8), we are presupposing that there is only one man from North Dakota. However, the pronoun *he* in (7) seems to carry no uniqueness presupposition. A similar untoward consequence holds if one assumes a Russellian account of definite descriptions as well. This consequence of D-type theory seems to be good reason to abandon it without even looking at the details of any particular D-type theory.

2.2 Situations to the rescue

This rejection of D-type theories, though, is too quick. According to Heim (1990), a D-type theorist can overcome the uniqueness problem by supposing that conditionals like (7) involve covert quantification over situations.

We will say more about the metaphysics of situations latter, but for now let us just give a very brief and very general account of their metaphysics that stems from Kratzer (1989). We can think of situations as parts of possible worlds. They are composed of individuals and properties of and relations between individuals. A situation, unlike a world, can omit some of the properties of an individual. So, for example, consider a situation s composed of only Scott Soames, the national anthem, and the property of singing the national anthem (at a time t and a world w). Now Scott Soames may also be standing at attention at t and w. However, s does not contain the property of standing at attention at t and w. We abstract away this property of Soames. We call s the *minimal situation* containing Soames, the national anthem, and the property of singing the national anthem. Minimal situations have extensions. A situation s' where Scott Soames is singing the national anthem (at t and w) and standing at attention (at t and w) is an extension of s.

Given this brief account of situations, we can now gloss Heim's solution to the uniqueness problem. According to Kadmon (1988), conditionals like (7) come with a covert quantificational adverb. In (7), this covert quantifier is a phonologically null *always*, which can be interpreted, according to Heim, as a universal quantifier over minimal situations and their extensions as (9) shows.

(9) $[\![[\text{always}\ {}_{s}\text{if}\ \alpha]\ {}_{s'}[\beta]]\!]^{g} = 1$ iff for every minimal situation $\mathbf{s}$ such that $[\![\alpha]\!]^{g\,s\backslash\mathbf{s}} = 1$, there is a situation $\mathbf{s}'$, where $\mathbf{s} \leq \mathbf{s}'$, such that $[\![\beta]\!]^{g\,s\backslash\mathbf{s},\,s'\backslash\mathbf{s}'} = 1$.[4]

[4]Following Heim, '$\leq$' denotes the part-of relation. So, $\mathbf{s}$ is a part of, or an extension of, $\mathbf{s}'$. Also, following Hiem, boldface situation variables are metalanguage situation variables.

(9) claims that conditionals in which the covert quantifier is a universal quantifier over situations are true if and only if for every minimal situation **s** in which the antecedent is true, there is an extension **s′** of **s** in which the consequent is true. Also, donkey anaphora in the consequent are able to make reference back to the minimal situations of the antecedent. For example, in (7), the donkey pronoun *he* is interpreted as a partial function from situations to men–namely, that function which to each situation in its domain assigns the unique man from North Dakota in that situation. So, the LF of (7) is as given in (10).

(10) [always $_s$[if [[a x: man(s)(x)][is-from-North Dakota(s)(x)]]] $_{s'}$[$f(s)$ loves(s') the Vikings]]

In (10), the domain of f = {s: s is a situation that contains the unique man from North Dakota}. Hence, for every $s \in Dom(f)$, $f(s)$ = the unique man from North Dakota in s. So, (7) is true if and only if

(11) For every minimal situation **s** such that there is a man from North Dakota in **s**, there is an extended situation **s′** of **s** such that the unique man from North Dakota in **s** likes in **s′** the Vikings.

The uniqueness problem, then, seems to be overcome. While, in (7), *he* is interpreted as a definite description with a uniqueness presupposition, this uniqueness presupposition is no longer unwelcome since **s** is a minimal situation that contains only one man from North Dakota. As Heim says,

> Letting [quantificational adverbs] quantify over minimal situations has made it possible to maintain an analysis of pronouns that is committed to uniqueness presuppositions, because it ensures that these uniqueness presuppositions will come out weak enough to be harmless.[5]

2.3 The problem of indistinguishable participants

While the D-type theory of Heim (1990) may be able to avoid any unwelcome uniqueness presuppositions in the examples we have looked at so far, it is not strong enough to avoid all unwelcome uniqueness presuppositions. Recall (1), which is an instance of the problem of indistinguishable participants: *If a bishop meets a bishop, he blesses him*. In (1), *he* and *him* will be represented as $f_1(s)$

[5]Heim (1990), p. 147

and $f_2(s)$, respectively. However, there seem to be no functions that could be used to interpret these pronouns as definite descriptions. As Heim notes, $f_1(s)$ ought to be the unique bishop in s and $f_2(s)$ ought to be the unique man who meets a bishop in s. However, the minimal situations of the antecedent have two bishops in them. Clearly, (1) means that when *two* bishops meet each other they bless each other. So $f_1(s)$ yields an incorrect uniqueness presupposition. Furthermore, since meeting is a symmetrical relation, $f_2(s)$ is not a suitable function either. The minimal situations quantified over in (1) allegedly cannot distinguish between the two bishops because there is not just one bishop who meets a bishop in any minimal situation in which a bishop meets a bishop. Hence, the problem of indistinguishable participants arises.

3 Elbourne's D-type Theory

3.1 Preliminary remarks

Elbourne (2005) offers a a modified account of Heim's D-type theory that seems to provide a solution to the problem of indistinguishable participants. In short, Elbourne argues that donkey pronouns are definite articles whose complements are subject to NP-deletion. If Elbourne is correct, then, abstracting away from irrelevant detail, at LF (12a) is (12b) and obtains its covarying reading the same way (12c) does.[6]

(12) a. If a farmer owns a donkey, he beats it

b. If a farmer owns a donkey, [he farmer] beats [it donkey]

c. If a farmer owns a donkey, the farmer beats the donkey.

The immediate question that arises, as Elbourne notes, is that if we are no longer treating pronouns as potentially bindable variables, how is it that we get a covarying reading in either (12b) or (12c)? Elbourne's answer is that binding does take place in (12b) and (12c). However, it is not individual variables that get bound. Rather it is situation variables that get bound and thereby account for the covarying readings.

To see exactly how Elbourne's situation based semantics accounts for covarying readings of donkey pronouns would take us too far off track. Elbourne's semantics is technically rich so that he can provide a compositional derivation of

[6] cf. Elbourne (2005), p. 48.

the truth conditions for sentences like (12a). We are not interested in the compositional details. What is important for our puroposes is that Elbourne's situation semantics is more fine-grained than Heim's 1990 proposal. In particular, definite and indefinite determiners, which for Elbourne include donkey pronouns, all have an argument slot for situations. So, the number of situations that arise in the denotation of conditionals like (12a) greatly increases. Consequently, in the denotation of conditionals like (12a), there is a more fine-grained situation structure. By *situation structure*, we mean the relations between the situations in the denotation of a given sentence. The upshot, for our purposes, of this added complexity is that Elbourne seems to be able to solve the problem of indistinguishible participants. We will now proceed to Elbourne's purported solution.

3.2 Elbourne's solution to the problem of indistinguishable participants

Elbourne's novel suggestion is that in sentences like (1) supposed indistinguishable participants are really distinguishable in terms of the structure of the situations that the semantics assigns to the antecedent of the conditional. Furthermore, since the interpretive dependence of donkey pronouns in the consequent of the conditional is captured by the binding of situation variables in the antecedent, the supposed indistinguishable participants in the consequent will also be distinguished in such a way that we avoid any untoward uniqueness presuppositions. Let us spell this out in detail.

We begin by examining the antecedent of (1), whose LF and denotation, if Elbourne is correct, are given in (14) and (15), receptively.

(13) a bishop meets a bishop

(14) [[a bishop] [λ_6 [[a bishop] [λ_2[t_6 meets t_2]]]]]

(15) λs_1. there is an individual x and a situation s_2 such that s_2 is a minimal situation such that $s_2 \leq s_1$ and x is a bishop in s_2, such that there is a situation s_3 such that $s_3 \leq s_1$ and s_3 is a minimal situation such that $s_2 \leq s_3$ and: there is an individual y and a situation s_4, such that s_4 is minimal situation $s_4 \leq s_3$ and y is a bishop in s_4, such that there is a situation s_5 such that $s_5 \leq s_3$ and s_5 is a minimal situation such that $s_4 \leq s_5$ and x meets y in s_5.[7]

[7]See Elbourne (2005) Appendix B1 for the derivation of (15).

Needless to say, keeping track of the situations quantified over in (15) is arduous. Following Elbourne, I provide (16) as both an aid for reading (15) and also as a diagram that displays the situation sturcture of (15).[8]

(16) $s_1[s_3[s_2\ x \text{ bishop}]\ [s_5[s_4\ y \text{ bishop}]\ x \text{ meets } y]]$

Elbourne argues that for any individuals x and y, the situation structure in (15) must treat x and y differently. Here's why. s_5 is defined as a minimal situation that contains s_4 and x meeting y. Importantly, then, $x's$ being a bishop is not part of s_5. Thus, a minimal situation s_2 such that x is a bishop cannot be a part of s_5. It is in this way that the structure of the situations quantified over in (14) distinguishes x and y. In Elbourne's words:

> For any situation containing particulars s_2 and s_5, defined as above, call the bishop whose bishophood is not a constituent of s_5 the "distinguished" bishop.[9]

Elbourne recognizes an immediate objection to distinguishing x from y in this way. MEETS is a symmetrical relation. So, it seems to follow that for any minimal situations s and s' composed of two individuals x and y that stand in the MEETS relation, $s = s'$. However, if Elbourne's semantics is correct, we arrive at an asymmetry. Elbourne spells out this asymmetry as follows:

> If we look at [(15)], it intuitively obvious that x and y are not being treated symmetrically, since y's being a bishop but not x's being a bishop is part of the large situation s_5, and x but not y is part of the small situation s_2.[10]

Given this asymmetry, the objection is that

> [t]here is no reason why, on observing a meeting of two bishops, we should analyze it in terms of the non-symmetrical situation structure in [(15)], rather than a perfectly symmetrical situation structure.[11]

[8]Here is some added help for parsing (16). Let '$[s_n\phi]$' denote a minimal situation s_n such that ϕ and let $s_i \leq s_j$ iff $[s_j\phi[s_i\psi]]$ or $s_j\phi[s_i\psi]$.

[9]Elbourne (2005), p. 149.

[10]Elbourne (2005), p. 148

[11]Elbourne (2005) p. 148. Note that I assume that a perfectly symmetrical situation structure in this case is one where for any minimal situations s and s', if s is a minimal situation where two bishops meet, then $s = s'$.

Elbourne's response to this objection is that the metaphysics of situations justifies this asymmetry. Elbourne follows Armstrong (1978) in claiming that situations are themselves particulars, since they, unlike universals, are not repeatable in any way. So, as we've been assuming, situations like other particulars have parts. For any particular x and any particular y, if x is composed of different parts than y, then $x \neq y$. Now assume (17).

(17) For any minimal situations s and s', if s is a minimal situation where two bishops meet, then $s = s'$.[12]

Next consider any minimal situation s' such that s' is composed of an individual x, an individual y, the property BISHOPHOOD, and the relation MEETS such that x is a bishop and and x meets y. The difference between s' and s_5, then, is that in s' a bishop x meets y whereas in s_5 x meets a bishop y. Now consider an extension s of s' such that s is a minimal situation containing s' and y is a bishop in s. So, s is a minimal situation where two bishops meet. From (17), then, it follows that $s = s_3$. However, s and s_3 have different parts, since $s' \leq s$ but $s' \not\leq s_3$ and $s_5 \leq s_3$ but $s_5 \not\leq s$. Thus, $s \neq s_3$. Contradiction! Hence, we can reject (17). Given the metaphysics of situations, then, the asymmetry that Elbourne is committed to seems to be justified.

With this asymmetry justified, we can now move to the consequent of (1). A straightforward application of Elbourne's treatment of donkey pronouns implies that the consequent of (1) is represented at LF as (18) so that the denotation of (1) is (19).

(18) [[he bishop] blesses [him bishop]]

(19) λs_6. for every minimal situation s_7 such that $s_7 \leq s_6$ and $[15](s_7) = 1$, there is a situation s_8 such that $s_8 \leq s_6$ and s_8 is a minimal situation such that $s_7 \leq s_8$ and the bishop in s_8 blesses in s_8 the bishop in s_8.

However, this straightforward application of Elbourne's D-type theory gives the wrong result. As (19) shows, it presupposes that there is a unique bishop in s_8 when in fact there are two.

To overcome this problem, Elbourne appeals to the asymmetrical situation structure of the antecedent. Recall that the bishop in s_2 is distinguished from the

[12]The expression *s is a minimal situation where two bishops meet* simply means that s is composed only of individuals x and y, the BISHOPHOOD property, and the MEETS relation such that x and y are bishops and x and y meet each other.

bishop in s_5 because $s_2 \not\leq s_5$. Elbourne next looses up his NP-deletion theory so that the descriptive content elided after *he* and *him*, respectively, is not only supplied by the elided NP *bishop* but also by "whatever mechanism or mechanisms enable us to narrow down the extension of the syntactically present descriptive material in other improper definite descriptions (p. 152)." Whatever mechanism does this job will supposedly make use of the asymmetrical situation structure of the antecedent so that the descriptive content of [he bishop] and [him bishop] is enriched to yield [the distinguished bishop] and [the undistinguished bishop], respectively.[13] Thus, the denotation of (1) is as follows.

(20) λs_6. for every minimal situation s_7 such that $s_7 \leq s_6$ and [15](s_7) = 1, there is a situation s_8 such that $s_8 \leq s_6$ and s_8 is a minimal situation such that $s_7 \leq s_8$ and the **distinguished** bishop in s_8 blesses in s_8 the **undistinguished** bishop in s_8.

Hence, there seems to be no unwanted uniqueness presuppositions in the denotation of (1).

However, there is still a problem. Intuitively, (1) claims that when two bishops meet each other, they bless each other. If (20) is the correct denotation, though, it is not clear that we get this reading. Elbourne's response to this worry is that we could have just as easily made the structure of the situations quantified over in (15) such that y is a bishop in s_2 and in x is a bishop s_4. Thus, in s_5 x is a bishop who meets y (who is not a bishop in s_5). He says:

> Given the thin particulars, bishop properties, and meeting relation of any actual pair of bishops meeting, there are two ways of dividing these entities up into thick particulars s_2 and s_5: one way would have one bishop in the think particular s_2 (and thus distinguished), and another way would have the other bishop in that particular. [14]

So, Elbourne's treatment of (1) does get the reading where the two bishops bless each other. It appears, then, that Elbourne's D-type theory provides a solution the problem of indistinguishable participants.

4 Against Elbourne 2005

As Elbourne notes, his solution works only if the antecedents of troublesome bishop sentences like (1) have asymmetrical situation structure. In this section,

[13] Note that *distinguished* here should be understood as Elbourne defines it. See p. 8.

[14] p. 150

I call into question whether bishop sentences really have the asymmetrical situation structure that Elbourne claims. First, I argue that if they do, then Elbourne faces the problem of distinguishable participants. Second, I show that in fact bishop sentences do not have the asymmetrical situation structure that Elbourne claims. I argue that from this it follows that Elbourne's solution to the problem of indistinguishable participants fails.

4.1 The first argument

To begin, let us recall (3) and its truth conditions (4a,b).

(3) If a bishop is the same height as a bishop, he loves him.

(4) a. If a bishop is the same height as himself, then he loves himself.

b. If two bishops are of the same height, then they love each other.

Now Elbourne must supplement his NP-deletion D-type theory of donkey pronouns with some other mechanism that enriches the descriptive content of donkey pronouns in order for his solution to the problem of indistinguishable participants to work. In short, NP-deletion is not sufficient to distinguish the two bishops in the consequent of (1). Elbourne does not tell what kind of mechanism this is, but surely it must be one that somehow recognizes the asymmetrical situation structure of the antecedent of (1) such that we thereby avoid unwanted uniqueness presuppositions in the consequent of (1).

However, what does such a mechanism do with conditionals like (3)? Let us suppose that (3) has the asymmetrical situation structure. Then presumedly such a mechanism must distinguish a bishop x from a bishop y in all (minimal) situations where x is the same height as y. However, since there are many minimal situations that are as described but $x = y$, such a mechanism must distinguish x from y, i.e., in each such situation the device must distinguish x from himself. Since this cannot be done, such a mechanism is a broken devise. Hence, the problem of distinguishable participants arises. In other words, if (3) has asymmetrical situation structure, then Elbourne's solution to the problem of indistinguishible participants fails since it gives rise to the problem of distinguished participants.

4.2 The second argument

I shall now show that bishop sentence like (1) and (3) in fact do not have asymmetrical situation structure that Elbourne claims.[15]

Given Elbourne's derivation of the denotation of the antecedent of (1), i.e, (15), the denotation of the antecedent (3) is (21) and its situation structure can be "displayed" by (22).

(21) λs_1. there is an individual x and a situation s_2 such that s_2 is a minimal situation such that $s_2 \leq s_1$ and x is a bishop in s_2, such that there is a situation s_3 such that $s_3 \leq s_1$ and s_3 is a minimal situation such that $s_2 \leq s_3$ and: there is an individual y and a situation s_4, such that s_4 is minimal situation $s_4 \leq s_3$ and y is a bishop in s_4, such that there is a situation s_5 such that $s_5 \leq s_3$ and s_5 is a minimal situation such that $s_4 \leq s_5$ and x is the same height as y in s_5.

(22) $s_1[s_3[s_2\ x$ bishop$]\ [s_5[s_4\ y$ bishop$]\ x$ is the same height as $y]]$

Now, in order to account for truth condition (4a), (21) needs to hold of a situation $s_{1'}$, which is defined as follows. First, give ourselves the following *minimal* situations $s_{2'}$, $s_{3'}$, $s_{4'}$, and $s_{5'}$. $s_{2'}$ is such that x is a bishop; $s_{4'}$ is such that y is a bishop; $s_{5'}$ is such that $s_{4'} \leq s_{5'}$, $x = y$, and x is the same height as y; and $s_{3'}$ is such that $s_{2'} \leq s_{3'}$ and $s_{5'} \leq s_{3'}$. We can now define $s_{1'}$ as a situation such that $s_{3'} \leq s_{1'}$. (If this is confusing just use (22), making the obvious changes, for help.) Given how we have defined $s_{1'}$, it follows that $s_{2'} = s_{4'}$. So, $s_{3'} = s_{5'}$. So, there is no asymmetric situation structure in $s_{1'}$.

This may seem like a desirable consequence, since it seems to follow from it that Elbourne's theory can account for (4a) and thereby avoids the problem of distinguishable participants. But this is not the case. The complete denotation of (3), given Elbourne's semantics, is given in (23).

(23) λs_6. for every minimal situation s_7 such that $s_7 \leq s_6$ and $[21](s_7) = 1$, there is a situation s_8 such that $s_8 \leq s_6$ and s_8 is a minimal situation such that $s_7 \leq s_8$ and the **distinguished** bishop in s_8 loves in s_8 the **undistinguished** bishop in s_8.

However, what is the sense of the predicate *distinguished* in (23)? Recall that Elbourne defines *distinguished* so that the predicate applies only when there are

[15]This second argument has benefited a great deal from Paul Elbourne's valuable suggestions.

two distinct situations, one of which the individual x to be differentiated is an F and the other of which x's being an F is not constitutive of that situation. So, in order for the predicate to be meaningful in (23), every minimal situation s such that [21](s) = 1 must have two distinct situations as proper parts. However, as $s_{1'}$ demonstrates, this is not the case in (21). Thus, the denotation of (3) is undefined at best. Note that the exact same consequence holds for the dentation of (1) as well, since it is nowhere specified in (15) that the $x \neq y$. Thus, Elbourne's solution to the problem of indistinguishable participants fails.

4.3 A response to my objection

It may seem like there is an easy fix to the objection I have raised. In fact, Elbourne (in personal communication) has suggested the easy fix that I'm sure most readers have in mind. Elbourne concedes that his original definition of *distinguished* runs into the problem I have raised. But thinks the way out of the problem I've raised is to define some new predicates *distinguished** and *nondistinguished** that get around the problem. Define *distinguished** as follows: an individual x is distinguished* with respect to a situation s iff either x is distinguished, as originally defined] or [s contains exactly one individual and x is that individual]. Define *nondistinguished** as follows: an individual x is nondistinguished* with respect to a situation s iff either [x is not distinguished, as originally defined], or [s contains exactly one individual and x is that individual]. Elbourne suggests that we can then understand the consequent of (3) as *the distinguished* bishop loves the nondistinguished* bishop*; thereby, blocking the objection I have raised.

I am not moved by this response. The disjunctive definition of *distinguished** and *nondistinguished** entails not only that Elbourne is committed to disjunctive properties (or relations) but also disjunctive situations. Clearly, *distinguished**, if it expresses any property (or relation) at all, expresses a disjunctive property (or relation). So, suppose we're given a *minimal* situation s such an individual x is distinguished*. Then x has the property of being either (i) the only individual in s or (ii) the individual in s such that for some property F and some situation s' that is a proper part of s, x's being F is not a constituent of s'. But then s is a situation that obtains iff only either (i) or (ii) is true of x. Thus, s is a disjunctive situation. Now whether there are disjunctive properties is a controversial issue. But there simply cannot be disjunctive situations, given the metaphysics of situations that Elbourne crucially relies on. Here's why. Recall that situations, for Elbourne, are particulars. Hence, they are not repeatable in any way. But disjunctive situations are repeatable. Consider s again. Suppose that (i) is true of x at some time t. Then,

s obtains at t. Now suppose that (ii) is true of x at some $t \neq t'$. Then, s obtains at t'. So, s obtains at two distinct times. Hence, s is a situation that is repeatable. Thus, we arrive at a contradiction and must conclude that disjunctive situations do not exist. Furthermore, we must eliminate any disjunctive property that entails that disjunctive situations exist. So, distinguished* and nondistinguished* must be eliminated. Hence, *distinguished** and *nondistinguished** do not have any denotation and Elbourne's response fails.

It needs to be noted that Elbourne cannot get around this objection to his response by simply changing his metaphysics. As we saw above, the only justification Elbourne provides for thinking that the antecedents of conditionals like (1) and (3) have asymmetrical situation structures is that the minimal situations denoted in these antecedents are particulars and not repeatable in any way.

I conclude, then, that (3) serves as a counterexample to Elbourne's (2005) D-type theory.

5 Against Ludlow 1994

Ludlow (1994) offers the following solution to the problem of indistinguishable participants. First, he claims that no two arguments in a sentence can have the same thematic role. He then suggests that the bishops in need of distinguishing in (1) can be distinguished by the distinct thematic role assigned to each bishop. The idea is that the denotation of (1) is roughly as characterized in (24).

(24) For all events e such that there is a bishop x and a bishop y and e is a meeting where x meets y and x is the agent of e and y is the patient of e, there is an event e' such that the agent bishop in e blesses the patient bishop in e.

Elbourne (2005) challenges Ludlow's approach on the grounds that events involving symmetric relations contain arguments with identical thematic roles. Thus, thematic roles do no real distinguishing work. I am going to suppose, for the sake of argument, that a thematic role approach can justify the claim that events involving symmetric relations can, contrary to Elbourne, contain arguments with distinct thematic roles.[16] However, I still think that appealing to thematic roles provides no solution to the problem of indistinguishable participants.

[16] See Liebesman (unpublished) for an argument against Elbourne's objection.

My objection is that with respect to events involving symmetric and reflexive relations appealing to thematic roles is not sufficient to distinguish an individual x from an individual y.

Consider, once again, (3). The denotation of the consequent of (3), according to the thematic role solution, will be something like *the agent bishop in e loves the patient bishop in e*. Now suppose that agenthood and patienthood are sufficient to distinguish the agent bishop from the patient bishop. Then, a thematic role solution faces the problem of distinguishable participants. The patient bishop must always be distinguished from the agent bishop. So, an individual must be able to be distinguished from himself in order to account for truth condition (4a). Since this cannot be done, the attempted solution fails.

So much, then, for a thematic role solution to the problem of indistinguishable participants.

6 Conclusion

I take my argument against Ludlow (1994) to generalize to any thematic role solution to the problem of indistinguishable participants. However, it is not exactly clear how to generalize my arguments against Elbourne to any situation based D-type theory, since most of my arguments targeted specifics of Elbourne's semantics that a given D-type need not share. So, I can only offer the following conjecture: for any situation based D-type theory T, T's solution the problem of distinguishable participants entails the problem of distinguishable participants.

Here is what I take to be good evidence for thinking my conjecture is true. The reason I take my argument against Elbourne (2005) to generalize to any situation based D-type theory is that it seems to me that the only hope a situation based D-type theory has for solving the problem of indistinguishable participants is to go Elbourne's route of both appealing to the device of minimal situations and making the situation structure of sentences in which donkey pronouns occur very fine grained. However, as we have seen, the device of minimal situation in conjunction with a very, very fine grained situation structure (recall the quite lengthly denotations of (1) and (3) that Elbourne's semantics derives!) gives rise the problem of distinguishable participants. Further research may show that there is a better strategy to take than Elbourne's. But, as of now, I take it that Elbourne's strategy is the best a situation based D-theorist can hope for. The problem is that it is flawed. Hence, my conjecture.

Finally, I would like to say a brief word about what follows from my argu-

ments here with respect to whether D-type theory is an adequate theory of donkey pronouns. (3), I have argued, is definitely a counterexample to the D-type theories we have looked at. Furthermore, I take it that these are the only plausible D-type theories out there. But often semanticists claim that so long as their theory has less problems than its rivals, we should favor their theory. So, if D-type theory has less problems (i.e., counterexamples) than, say, DRT theories, we should favor D-type theory. I have never really understood such a claim. To me, either it is trivial in the sense that a theory with less counterexamples has less problems than a theory with more counterexamples, or it is false in the sense that when seeing which of two theories is correct, we should compare the number of counterexamples to each theory. So, I take it that my counterexample shows that the D-type theories we have looked at so far are false. Hence, further research should either show that the counterexample fails to be a counterexample to some plausible D-type theory or abandon D-theory.

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