# 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 unique 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 be no way to

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

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 at least one type of D-theory cannot get around either the problem of indistinguishable participants or the problem of distinguishable participants–namely, D-type theory that is embedded in a situation semantics.[2] Of course, it has been know for some time that even very powerful situation based D-type theories have trouble with the problem of indistinguishable participants. For example, Heim (1990) presents an elegant situation based

[2]The reason why I have chosen to argue only against situation based D-type theories is because I think that Elbourne (2005) has provided devastating arguments against other D-type solutions to the problem of indistinguishable participants. See Elbourne (2005) Chapter 4.

D-type theory that cannot solve this problem. Recently, though, Elbourne (2005) has offered a novel situation based D-type theory that purports to avoid the problems with Heim's D-type theory. In particular, Elbourne argues that his D-type theory can solve the problem of indistinguishable participants. Since I think that Elbourne has provided the best situation based D-theory so far, I am going to use his theory to show that appealing to situations does not provide a solution to the problem of indistinguishable participants. My argument, in short, is that a solution to the problem of indistinguishable participants creates the problem of distinguishable participants, which cannot be solved by appealing to situations.

The plan of the paper is as follows. First, I will outline the situation based D-type theory of Heim (1990) to show both the strengths and weaknesses of appealing to situations to account for sentences with problematic uniqueness presuppositions. Second, I will look at the details of the D-type theory of Elbourne (2005) and state his argument that appealing to situations can solve the problem of indistinguishable participants. Lastly, I will show that Elbourne's solution to the problem of indistinguishable participants fails since it gives rise to the problem of distinguishable participants.

# 2 Heim 1990

## 2.1 The uniqueness problem

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.

(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. 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 (1987), 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 $[\![\beta]\!]^{g\,s\backslash\mathbf{s},\,s'\backslash\mathbf{s}'} = 1$.[3]

[3]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.[4]

## 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 $f_1(s)$ and

[4]Heim (1990), p. 147

$f_2(s)$, 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. Thus, (1) seems to be a counterexample to D-type theories.

# 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.[5]

(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. Once again, it is situation semantics to the rescue.

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

[5] 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. Elbourne's lexical entries include an argument slot for situations. 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] [$\lambda_6$ [[a bishop] [$\lambda_2$[$t_6$ meets $t_2$]]]]]

(15) $\lambda s_1$. 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 $s_5$.[6]

[6]See Elbourne (2005) Appendix B1 for the details of the calculation of (13).

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).[7]

(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 $y$. Thus, the minimal situation $s_2$ of $x$'s being 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 $y$.

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 $s_2$.[8]

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.[9]

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).

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

[8]Elbourne (2005), p. 148

[9]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 $s = s'$.

(17) For any minimal situations $s$ and $s'$, if $s$ is a minimal situation where two bishops meet, then $s = s'$.[10]

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) $\lambda s_6$. for every minimal situation $s_7$ such that $s_7 \leq s_6$ and $[12](s_7) = 1$, 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 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(s) does this job will supposedly make use of the asymmetrical situation structure of the antecedent so that the descriptive content of [he bishop] and

[10]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.

[him bishop] is enriched to yield *the distinguished bishop* and *the undistinguished bishop*, respectively. Thus, the denotation of (1) is as follows.

(20) $\lambda s_6$. for every minimal situation $s_7$ such that $s_7 \leq s_6$ and $[26](s_7) = 1$, 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. [11]

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 The Problem of Distinguishable Participants

As Elbourne notes, his solution works only if the antecedents of troublesome conditionals like (1) have asymmetrical situation structure. The asymmetrical situation structure of the antecedent of (1) ensures that for each situation $s$ quantified over in the consequent of (1), it is possible to distinguish one bishop from the other bishop in the consequent. In this section, I call into question whether asymmetrical situation structure in combination with whatever mechnism it is that does the distinguishing work for Elbourne really makes the correct predications for sentences

[11] p. 150

with donkey pronouns. I don't think it does and provide (3) as a counterexample to prove my claim.

To begin, let us recall (3).

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

The intuitive reading of (3) is that when two bishops are of the same height, they love each other. Given Elbourne's treatment of (1), it seems that his D-type theory can account for this reading. We can represent the situation structures required to get the intuitive reading of (3) as follows:

(21) a. $[s_8\,[s_7\,[s_3\,[s_2\,x$ bishop$]\,[s_5\,[s_4\,y$ bishop$]\,x$ is the same height as $y]]]]\,(\iota z$ :distinguished $z)$ loves $(\iota z$ :undistinguished $z)]$

b. $[s_{8'}\,[s_{7'}\,[s_{3'}\,[s_{2'}\,y$ bishop$]\,[s_{5'}\,[s_{4'}\,x$ bishop$]\,x$ is the same height as $y]]]]\,(\iota z$ :distinguished $z)$ loves $(\iota z$ :undistinguished $z)]$

However, as mentioned earlier, the above intuitive reading of (3) does not get the truth conditions of (3) correct, since (3) is true only if every bishop that is the same height as himself is such that he loves himself. The reason for this is that IS-THE-SAME-HEIGHT-AS is a symmetric and reflexive relation. There are certainly situations where a bishop is the same height as himself and loves himself. The question is whether Elbourne's semantics can account for these situations, i.e., whether these situations are quantified over in (3), and furthermore if they are quantified over then how does the asymmetrical situation structure of the antecedent interact with whatever mechanism it is that distinguishes individuals so that the uniqueness presuppositions of pronouns in the consequent are satisfied?

Recall that 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)? If the antecedent of (3) has a asymmetrical situation structure, i.e., treats $x$ differently than $y$, then presumedly such a mechanism must distinguish $x$ from $y$ in all (minimal) situations where a bishop is the same height as a bishop. However, since there is a minimal situation that contains only one bishop $x$ and, trivially, $x$ is the

same height as himself, such a mechanism must distinguish $x$ from himself. Since this cannot be done, such a mechanism is a broken devise. In short, Elbourne's solution to the problem of indistinguishible participants gives rise to the problem of distinguished participants.

Let us spell out in more detail why the problem of distinguished participants is such a problem for Elbourne. The primary issue is whether Elbourne can get the truth conditions for (3) correct. The problem of distinguishable participants shows that he can't. Here's why.

Let us begin with the antecedent of (3). Given Elbourne's treatment of the antecedent of (8), i.e,. (14) and (15), the antecedent of (3) is represented at LF as (22) and its denotation is given in (23).

(22) [[a bishop] [$\lambda_6$ [[a bishop] [$\lambda_2$[$t_6$ is the same height as $t_2$]]]]]

(23) $\lambda s_1$. 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 $s_5$.

Now, if the situation structure of (15) must treat $x$ and $y$ differently, then so must the situation structure of (23) treat $x$ and $y$ differently. The problem with (23), though, is that is must make room for a situation where $x$ is identical to $y$ in addition to being a bishop and being the same height as $y$. Let us dub this situation '$s_{3''}$'. To see why $s_{3''}$ is a problem, let us consider the following minimal situations:

| | |
|---|---|
| $s_2$ | = $x$ is a bishop |
| $s_4$ | = $y$ is a bishop |
| $s_5$ | = $x$ is the same height as $y$ and $s_4 \leq s_5$ |
| $s_3$ | = $s_2 \leq s_3$ and $s_5 \leq s_3$, but $s_2 \not\leq s_5$ |
| $s_{2'}$ | = $y$ is a bishop |
| $s_{4'}$ | = $x$ is a bishop |
| $s_{5'}$ | = $x$ is the same height as $y$ and $s_{4'} \leq s_{5'}$ |
| $s_{3'}$ | = $s_{2'} \leq s_{3'}$ and $s_{5'} \leq s_{3'}$, but $s_{2'} \not\leq s_{5'}$ |

If Elbourne's semantics is correct, then the above table exhausts all the possible *minimal* situations quantified over in (21). So, $s_{3''} = s_3$ or $s_{3'}$. However,

choosing between $s_3$ and $s_{3'}$ regarding which one is identical to $s_{3''}$ seems entirely arbitrary. But, matters are worse than this for Elbourne.

Suppose $s_{3''} = s_3$.[12] Then, one cannot distinguish $x$ from $y$ in $s_3$ since $x$ is identical to $y$ in $s_{3''}$. From this it follows that Elbourne's semantics does not get the truth conditions of (3) correct. Recall that (3) is true if and only if (4a) and (4b). Since we are supposing $s_{3''} = s_3$ and since $x$ cannot be distinguished from $y$ in $s_{3''}$, let us be charitable and claim that Elbourne's semantics accounts for (4a). The reason why we are being charitable is that it is not clear whether Elbourne's semantics can actually compute truth condition (4a). This is because whatever mechanism it is that allows Elbourne's semantics to avoid untoward uniqueness presuppositions must figure into the compositional derivation of (4a). However, we have already seen that this mechanism has problems with (3) if all it has to work with is the situation structure of the antencedent. It should work the same way it does with (1), but cannot since one cannot distinguish someone from herself as is required if it is to work as it does in (1). Thus, the computation may fail. We will ignore this worry for now, since there is a bigger worry I want to press– namely that, given our suppositions, Elbourne cannot account for (4b). In order to account for (4b), the situation structure of (3) must have, in order to satisfy the uniqueness presuppositions of the pronouns in the consequent of (3), an ordered pair of minimal situations $\langle s_i, s_j \rangle$ such that in $s_i$ one bishop $x$ is distinguished and loves the other bishop $y$ and in $s_j$ $y$ is distinguished and loves $x$. (Recall 21a and 21b.) However, no such order pair exists. At most we get one situation in which bishop $y$ is distinguished from bishop $x$ and $x$ loves $y$. This is because the distinguishing mechanism Elbourne relies on to satisfy the uniqueness presuppositions of the pronouns in the consequent of (3) has only $s_{3'}$ to work with. It looks to the antecedent of (3). It finds $s_3$ and $s_{3'}$. But $s_3$ doesn't let it do any work. So, it goes with $s_{3'}$. It does what work it can with $s_{3'}$, yielding the result that if a bishop is the same height as a bishop, then the distinguished bishop loves the undistinguished bishop. But now there is no more work for it do. So, we do not get the result that if two bishops are the same height, then they love *each other*. We only get that if the antecedent is satisfied then the distinguished bishop loves the undistinguished bishop. Thus, Elbourne's semantics fails.

A similar argument applies under the supposition that $s_{3''} = s_{3'}$. Thus, in either case Elbourne's D-type theory fails. Here is one way to think of my argument against Elbourne's D-type theory: it faces either the problem of indistinguishable

[12]Note that $s_{3''}$ cannot be identical to both $s_3$ and $s_{3'}$ since $s_3 \neq s_{3'}$. $s_3 \neq s_{3'}$ because they have different parts.

participants or the the problem of distinguishable participants. Suppose that Elbourne's solution to the problem of indistinguishable participants is sound. Then, given the situation structure of the denotation of (3), in situations where a bishop is the same height as himself (which is all of them!), he is distinguished from himself. Thus, the problem of distinguishable participants arises. Suppose that the problem of distinguishable participants does not arise. That is, suppose that in situations where a bishop is the same height as himself, he is not distinguished from himself. Then, there seems to be no way that in minimal situations where two bishops are of the same height, Elbourne's semantics can distinguish one bishop from the other. Thus, the problem of indistinguishable participants arises.

# 5 Conclusion

I have used Elbourne's D-type theory as a foil to show that appealing to situations cannot solve all the problems D-type theories of donkey pronouns face. My main argument is that appealing to situations to solve an old problem gives rise to a new problem. The reason I take my argument against Elbourne 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 I hope to have shown, this strategy is flawed. Thus, I take it that my arguments show that the problem of indistinguishable participants and the new problem of distinguished participants present insurmountable obstacles for any situation based D-type theory.

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