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Complex Demonstratives and Their Singular Contents

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Complex demonstratives are linguistic expressions of the form “that *N*” or “this *N*”, where *N* is a common noun phrase (an *N'* or NP, according to some syntactic frameworks). Examples include ‘this table’ and ‘that man in a blue shirt’.¹ They are called ‘complex demonstratives’ to contrast them with the simple demonstratives ‘this’ and ‘that’, and to contrast them with syntactically simple pronouns that have demonstrative uses, such as ‘he’ and ‘she’.

Are complex demonstratives singular terms? That is, are their extensions (with respect to appropriate parameters) just individual objects? Or are they quantifier phrases, like the phrases ‘every table’ and ‘some man in a blue shirt’? Speakers use complex demonstratives to refer to objects. In that respect, they resemble simple demonstratives, and nearly all semantic theorists agree that simple demonstratives are singular terms. Yet complex demonstratives also resemble

¹The plural terms “these *Ns*” and “those *Ns*” are also complex demonstratives. About notation: I use single quotes to mention linguistic expressions. I use italicized letters, such as ‘*N*’, as metalinguistic variables. I use double-quotes in place of corner-quotes. I also sometimes use double-quotes for direct quotation and scare quotes. About terminology: I use ‘complex demonstrative’ as a purely syntactic term for expressions with a certain syntactic form. Others use ‘demonstrative description’ in this same syntactic way. Both their terminology and mine might be misleading, for as we use these terms, it is legitimate to say that a complex demonstrative or a demonstrative description has a non-demonstrative use (for instance, a use as a bound variable). See section 6. King’s (2001, 2008) term “‘that’-phrase” is less misleading in this respect. If one wants a semantically neutral, purely syntactic term for determiner phrases (DPs) whose determiners are ‘this’, ‘that’, ‘these’, or ‘those’, then I suggest ‘TDP’. (Thanks to Nathan Salmon for discussion.)

quantifier phrases in syntactic form, and quantifier phrases do not refer to individuals. Hence some theorists have argued that complex demonstratives are singular terms, while others have argued they are quantifier phrases.

The disagreements about complex demonstratives resemble older disagreements about definite descriptions. Speakers use definite descriptions to refer to objects, though they syntactically resemble quantifier phrases. Some theorists (such as Frege) have held that they are singular terms, while others (such as Russell) have held that they are quantifier phrases. These disagreements have led theorists into discussions of central questions in semantics and pragmatics. Must syntactically similar expressions be semantically similar? How does use determine semantic content? How does semantic content constrain use? When do distinct types of use indicate ambiguity? Complex demonstratives raise the same questions, but they allow us to approach the questions from a new angle, and they (of course) raise their own peculiar issues.

I have argued in previous work (Braun 1994) that complex demonstratives are singular terms. In fact, I defended the stronger view that they are *directly referential*: roughly speaking, their semantic contents, in contexts, are the individuals to which they refer.² Recent work on

²The term ‘direct reference’ comes from Kaplan (1989a). Different theorists use the term somewhat differently. Others have defended views similar to mine. Davies (1982), McGinn (1981), and Larson and Segal (1995) assign extensions (or referents) to complex demonstratives that are appropriate for genuine singular terms. But they assume Davidsonian semantic frameworks that do not assign semantic contents to complex demonstratives, so their work is neutral on direct reference. Kaplan (1989a, pp. 524, 527) briefly mentions complex demonstratives and suggests that they are directly referential. Schiffer (1981), Recanati (1993), and Perry (1997, 2000) say (or presuppose) that the semantic contents of complex demonstratives are simply objects. Richard (1993) presents a view on which the semantic content of “that *N*” consists of an object together with the property expressed by *N*. Dever (2001) presents a similar view, paired with an unorthodox syntactic theory. Braun (1994, 1995), Borg (2000), Salmon (2002), and Corazza (2003) present direct reference theories.

complex demonstratives has dismissed direct reference theories too quickly, in my opinion.³ In this paper I elaborate on my previous view and defend it from objections. I appeal rather heavily to pragmatics. Thus my defense of direct reference for complex demonstratives resembles typical defenses of quantificational views of definite descriptions.⁴ In what follows, I ignore the types of use of complex demonstratives on which they seemingly function as bound variables and anaphora (see section 6 for my reasons). I also focus on *singular* complex demonstratives and mostly ignore plural complex demonstratives (expressions that have the form “those *Ns*” or “these *Ns*”, for instance, ‘those tables’ and ‘these men in blue shirts’).⁵

1. Background Assumptions of My Theory

I assume a certain semantic framework in my theory of complex demonstratives that, in its essentials, comes from David Kaplan (1989a). I assumed this same framework in Braun 1994 and 1995.⁶

I assume that linguistic expressions have two sorts of meaning, which I call *linguistic meaning* and *semantic content*. (Kaplan uses the terms ‘character’ and ‘content’.) For example, the word ‘today’ has a single linguistic meaning, but sentences that contain it semantically express different propositions with respect to different contexts on different days. So ‘today’ has

³I particularly have King (2001) and Lepore and Ludwig (2001) in mind here. They defend quantificational accounts, as do Taylor (1980) and Neale (1993, 2004).

⁴Thanks to Lynsey Wolter for pointing out the parallels.

⁵Plural phrases raise a host of issues that I cannot reasonably hope to address here.

⁶One could reject Kaplan’s framework, while accepting much of the view that I present below, but I will not take the space required to outline all of the options here.

a single linguistic meaning, but has different semantic contents with respect to different contexts.

Linguistic expressions *semantically express* their semantic contents, with respect to contexts. Semantic content is always relativized to context, though this relativization is often trivial: for instance, the semantic content of ‘desk’ is the same with respect to every context. I assume here that the semantic content of a declarative sentence, in a context, is a *proposition*, and that propositions are among the objects of various linguistic and cognitive attitudes, such as assertion and belief. I assume that the semantic content of a proper name in a context is an individual, and that this semantic content does not vary from context to context. I usually assume that the semantic contents of simple predicates, in contexts, are *attributes*, that is, properties or relations. (In the more formal parts of my theory, I say that their contents are propositional functions. See section 9.5 and the Appendix.) I move freely between two familiar views of the semantic contents of quantifiers (in contexts), depending on which theory is more convenient at the moment. On one of these views, the semantic contents of quantifiers, in contexts, are binary relations that can hold between properties. On the other view, the semantic contents of quantifiers, in contexts, are functions from properties to properties of properties.⁷

I assume that many semantic contents are *structured*. In particular, *propositions* are structured, as Russell held. The semantic content of sentence (1) in any context is a structured entity containing, as constituents, the semantic contents of ‘Bill Clinton’ and ‘smokes’ in that context. (I nearly always ignore time and tense in this paper.) I represent this proposition with the *n*-tuple (1p).

⁷In the Appendix, I adopt yet another view, but one that is closely related to this second view, namely that the semantic contents of quantifiers are functions from propositional functions to properties of propositional functions.

(1) Bill Clinton smokes.

(1p) <Bill Clinton, smoking>.

A *singular* proposition is one that, like (1p), contains an individual as a constituent.

Linguistic expressions also have extensions. Extension is always *doubly* relativized, to *both* context *and* possible world. (Perhaps possible worlds should be replaced with *circumstances of evaluation* that include not only possible worlds but also times and other parameters. But I shall ignore these additional parameters in this paper.) For instance, the sentence ‘I like broccoli’ has different semantic contents in different contexts, and each such semantic content determines different extensions (different truth values) at different worlds. So the sentence ‘I like broccoli’ has different extensions with respect to different pairs of contexts and worlds. I assume that every context c has an associated agent c_A (the agent of c), time c_T (the time of c), and possible world c_w (the world of c). (I will mention further contextual parameters later. I will mostly ignore time, and there are many contextual parameters that I will not mention at all.) When I speak of the extension of an expression in a context c , without mentioning a world, I mean its extension with respect to c and the world of c . A *singular term* is a linguistic expression whose extension (if any) at any given context and world is an individual. A singular term *refers* at a context c and world w to its extension with respect to c and w .

I assume here (following Kaplan 1989a) that the linguistic meaning (‘character’) of an expression is a function from contexts to semantic contents. For instance, the linguistic meaning of ‘I’ is a function from any context to the agent of that context. Similarly, the linguistic meaning of a complex expression, such as a sentence, is a function from contexts to appropriate semantic contents. For instance, the linguistic meaning of ‘I like broccoli’ is a function from

contexts to semantic contents which, at any context, yields the proposition whose constituents are the agent of the context and (roughly) the property of liking broccoli.

On a Kaplanian theory like mine, there is a significant difference between necessary truth and a certain sort of universal truth, *truth in all contexts*. There is also an important difference between these and truth in all contexts *in all structures appropriate for a semantics of demonstratives*. Kaplan (1989a) calls the latter ‘logical truth’. Consider (2).

(2) I exist.

Kaplan claims that (2) is true in every context in every structure appropriate for demonstratives. Suppose that this is so. Nevertheless, there are contexts in the intended structure in which (2) semantically expresses a contingent proposition⁸. For instance, the semantic content of (2) in contexts in the intended structure in which David Kaplan is the agent is the proposition that David Kaplan exists, which is not a necessary truth. So ‘I exist’ is true in all contexts in all structures, and so is a Kaplanian logical truth, but in some contexts it does not express a necessarily true proposition. Conversely,

⁸By *the intended structure* for demonstratives, I mean the structure in which (a) the set that plays the role of “the set of contexts” in the structure is the set of (actual and possible) contexts, and not just an arbitrary set of (e.g.) numbers or tables or snowflakes, (b) the set that plays the role of “the set of possible worlds” is the set of possible worlds, and not just an arbitrary set, (c) the structure’s interpretation function assigns the correct intended semantic contents to expressions of English (relative to contexts and worlds), and so on. Except when I signal otherwise, by ‘context’ I shall mean *contexts* (the contexts of the intended structure), and not the various entities that play the role of contexts in various unintended structures. I will mention “contexts” in unintended structures only when I discuss issues about logic. The distinction between the intended structure and the unintended structures is important because some sentences are true in all contexts (in the intended structure), but are false in some “contexts” in some unintended structures, and so are not Kaplanian logical truths. Examples include ‘All whales are mammals’ and ‘Every bachelor is unmarried’. For further discussion, see Braun 1995.

(3) I fail to exist

is false in every context, but in many contexts expresses a proposition that is possibly true, so that (4) is true in such contexts.

(4) Possibly, I fail to exist.

Therefore, we must carefully distinguish necessary truth from truth-in-all-contexts and truth-in-all-contexts-in-all-structures. Similarly for possible-truth and truth-in-some-context and truth-in-some-context-in-some-structure.

2. A Theory of Complex Demonstratives

Suppose a reasonable speaker assertively utters the sentence ‘That dog is smart’. When she does so, she intends to refer to an object on which she has focused. She decides to utter ‘that dog’ because she thinks that the object on which she has focused is a dog. She may believe that her hearers already know that the relevant object is a dog, and so she may think that uttering ‘that dog’ will enable her hearers to focus on that object. So by uttering ‘That dog is smart’ she hopes to allow her hearers to focus on the object about which she is thinking and she hopes to communicate a singular proposition about it. If this naive description is correct, then it is natural to suppose that the semantic content of a complex demonstrative, in a context, is just an individual, what we would naively call ‘the referent of the complex demonstrative’ (in the context).

To capture this in a Kaplanian semantic theory, we can suppose that many (though not all) contexts c have an associated *object in focus* or *object available for demonstrative reference* (in addition to an associated agent, world, and so on). I will use the shorter Kaplanian term

demonstratum of c for this associated object (in symbols, c_D).⁹ Roughly speaking, an object is the demonstratum of some context when an agent believes a singular proposition about the object and focuses on it in the way that a speaker does before she attempts to refer to an object with a demonstrative. The agent of c need not point at the object, or otherwise publicly demonstrate it; the agent of c need not perceive the object at the time of c ; the object need not even exist at the time of c —imagine an agent using ‘that dog’ to refer to a long-dead dog that she remembers. (I will, nevertheless, sometimes speak of demonstrated objects.) Next, we can take the semantic content of “that N ”, in a context c , to be the demonstratum of c , *if* that object satisfies (in the world of c) the semantic content of N in c .¹⁰ If there is no demonstratum in c , or the demonstratum of c does not satisfy the semantic content of N in c , then “that N ” has no semantic content in c .¹¹

⁹I assume here, for the sake of simplicity, that each context has at most one demonstratum. Some sentences contain multiple occurrences of a single complex demonstrative (e.g., ‘That man is taller than that man’), and the seeming truth of such sentences, in some contexts, suggests to some theorists that some contexts contain more than one demonstratum, and suggests to other theorists (including me [1996] and Salmon [2002]) that demonstrata and/or demonstrations are not parts of contexts. The semantic issues raised by such sentences are complicated and not directly relevant to my concerns here, so I ignore them.

¹⁰I assume here, and in the rest of this section, that N has a semantic content in c . See sections 9.5-9.6 for discussion.

¹¹This theory does not concern utterances, but rather semantic values of expressions at contexts. As I mentioned, on this theory some contexts c have a demonstratum even though the agent of c does not utter a demonstrative expression at the time of c . In other contexts c , the agent of c *does* utter a complex demonstrative, but that complex demonstrative fails to refer in c to the demonstratum of c , and fails to have that object as its semantic content in c . (Thus the term ‘demonstratum of c ’ may be misleading; perhaps the term ‘object available for demonstrative reference in c ’ is less so.) On the theory presented here, complex demonstratives that are un-uttered in c can be evaluated for semantic content and semantic reference in c . For example, suppose that the agent of c focuses on the cat Tabby, but mistakes Tabby for a dog and utters ‘That dog is ugly’. Then ‘that dog’ fails to have a semantic content in c . However, ‘that

For example, if Sheila has appropriately focused on Rover, and has singular beliefs about Rover, and wishes to speak of Rover, then there is a context c in which she is the agent and Rover is the demonstratum. (Perhaps Sheila is thinking of Rover *as* a dog, and perhaps this is why she is able to focus on Rover, and why Rover, rather than Rover's tail, is the demonstratum of c . But these *ur*-semantic matters are not my main concern here.) The semantic content of 'that dog' in c is Rover himself, if Rover satisfies (in the world of c) the semantic content of 'dog' in c . The semantic content of 'dog' in c is just the property of being a dog. So if Rover is a dog (in the world of c), then Rover is the semantic content of 'that dog' in c .¹² Notice that the property of being a dog is not a constituent of the semantic content of 'that dog' in c : Rover, and Rover alone, is the semantic content of 'that dog' in c . But the property does play a role in *determining* (or *fixing*) the semantic content of 'that dog' in context c . It also (as we will see) plays a role in determining the linguistic meaning (character) of 'that dog'.

Under the conditions described above, the semantic content of sentence (6) in context c is the singular proposition that Rover is smart, which we can represent with $(6p_1)$.

(6) That dog is smart.

cat' has Tabby as its semantic content in c , even though the agent of c does not utter 'that cat'. Similarly for 'that animal' and 'that thing'. In fact, 'that thing' has the demonstratum of c as its semantic content in every context that has a demonstratum, including those in which the agent utters nothing. In comments on an earlier version of this paper, Zachary Abrahams proposed that the demonstrata of a context be relativized to properties, so that (roughly speaking) 'that man' may have one demonstratum in a context, while 'that woman' has another. (See Taylor 1980 for a related idea.) Depending on how the view is developed, such a view may entail that if a complex demonstrative is not uttered by the agent of c , then it has no semantic content in c . This seems to me to be a serious disadvantage of such a theory.

¹²Sheila's uttering 'that dog' in the world of c makes no difference to whether 'that dog' has a semantic content in c . 'That animal' has Rover as its semantic content in c , though Sheila does not utter it at the time and world of c .

(6p₁) <Rover, being smart>.

If c is a context in which there is no demonstratum, or there is one but it is not a dog, then the sentence semantically expresses a *gappy proposition* in c , which we can represent with (6p₂).

(6p₂) <___, being smart>

The role of gappy propositions in this theory is motivated by parallel issues concerning non-referring names. Speakers sometimes sincerely, literally, and assertively utter sentences that contain non-referring proper names: a plausible case is one in which a young child utters ‘Santa Claus is coming tonight’. In such cases, I hold that the semantic content of the sentence is a gappy proposition, and the speaker asserts and believes that gappy proposition (Braun 1993, 2005). An agent who utters ‘That dog is smart’ in a context in which there is no demonstratum, or the demonstratum is not a dog, is comparable to someone who utters a sentence containing a non-referring proper name. Thus I hold that the semantic content of such a sentence in such a context is a gappy proposition.¹³ Atomic gappy propositions are not true. I shall remain neutral here on whether they are false or neither-true-nor-false.

The linguistic meaning of “that N ” is a (partial) function from contexts to semantic contexts such that, for any context c , the value of the function is the demonstratum of c , if the

¹³Salmon (1998) holds that ‘Santa Claus’ refers to a mythical object (which is a certain sort of abstract artifact). A misguided direct reference theorist (not Salmon—see Salmon 2002) might similarly think that “empty complex demonstratives” refer to mythical objects, and have those objects as their semantic contents. For instance, if c is a context in which the agent is focused on a cat, then the semantic content of ‘that dog’ in c is a mythical object. I reject this view, because no mythical object is a dog, and so this view is inconsistent with holding (as I do) that the semantic content of ‘that dog’ in c must satisfy the semantic content of ‘dog’ in c . Another theorist might propose that if the agent of c utters ‘that dog’ in c , then she *speaker*-refers to a mythical object. I doubt it, but this claim is consistent with my view, which concerns semantic reference and semantic content.

demonstratum satisfies (in the world of c) the semantic content of N in c . If there is no demonstratum in the context, or the demonstratum fails to satisfy the semantic content of N in c , then the linguistic meaning of “that N ” yields no value when applied to c . Thus the linguistic meaning of ‘that dog’ is the (partial) function from contexts to individuals whose value for any context c , is (a) the demonstratum of c , if there a demonstratum of c and it is a dog in the world of c , and (b) nothing, otherwise.¹⁴

The extension of “that N ”, if any, in a context c and a world w (whether or not w is the world of context c) is identical with the semantic content of “that N ” in c , if any. If “that N ” has no semantic content in c , then it has no extension in c and w . We can say that the extension of “that N ” in c is object o (without mentioning a world) iff o is its extension in c and the world of c . “That N ” refers to o with respect to c and w iff o is its extension in c and w . Therefore on this view, complex demonstratives are genuine *singular terms* that *refer* to individuals, with respect to (some) contexts and worlds. Further, the extension of a complex demonstrative in context c and world w (if any) does not vary from world to world, once c is fixed. In that sense, complex demonstratives are *rigid designators*. In fact, they are *obstinately rigid* (Salmon 1981): if a complex demonstrative refers to object o with respect to a context c and world w , then it refers to o with respect to c and all worlds w' , whether or not o exists at w' .

The expression ‘that’ also has a linguistic meaning and a semantic content, with respect to a context. The linguistic meaning of ‘that’ is a function from contexts to contents which, for each context c , delivers the semantic content of ‘that’ in c . The semantic content of ‘that’ varies

¹⁴In previous work (Braun 1994) I argued that an adequate semantics of complex demonstratives needs *structured* characters in addition to functional characters. I still believe this, but I ignore structured characters here.

from context to context. In each context, its semantic content is a (partial) function from properties to individual objects. If c is a context, I call the function that it semantically expresses in c ‘ THAT_c ’. (If d and e are contexts, then the semantic contents of ‘that’ in d and e are THAT_d , and THAT_e , respectively.) If P is a property (such as the property of being a dog), then $\text{THAT}_c(P)$ is the demonstratum of c , if c has a demonstratum that has property P in the world of c . Otherwise, $\text{THAT}_c(P)$ has no value. Thus the semantic content of (6) in context c can be represented with $(6p_3)$, no matter what c is like.

$(6p_3)$ $\langle \text{THAT}_c(\text{being a dog}), \text{being smart} \rangle$

If Rover is the demonstratum of c , and is a dog in the world of c , then $(6p_3)$ is identical with $(6p_1)$. If there is no demonstratum in c , or there is one but it is not a dog in the world of c , then $(6p_3)$ is identical with the gappy proposition $(6p_2)$. It is crucial to note that $(6p_3)$ does *not* have context c or the function THAT_c or the property of being a dog as a constituent. Rather, $(6p_3)$ has the *value* of THAT_c , when applied to the property of being a dog, as a constituent (if there is such a value). Although the semantic contents of ‘that’ and ‘dog’ in c determine the semantic content of ‘that dog’ in c , the semantic content of ‘that dog’ does not have the semantic contents of ‘that’ and ‘dog’ in c as constituents. Complex demonstratives fail to be content-compositional in that strong sense.

My theory of complex demonstrative is a *direct reference* theory of complex demonstratives, for it says (roughly speaking) that the semantic content of a complex demonstrative, in a context, is simply an individual. But my theory includes claims that other direct reference theorists might want to reject (e.g., claims about gappy propositions). Thus I call

it the *Singular Content Theory*.¹⁵

3. Some Consequences of the Singular Content Theory and some Remarks on Pragmatics

The Singular Content Theory entails a Kaplanian divergence between possible-truth and truth-in-some-context for sentences containing complex demonstratives. Consider a context c in which Natasha is the agent and Boris is the demonstratum, and suppose that Boris is a spy in the world of context c . Then the semantic content of ‘that spy’ in c is Boris, and the semantic content of (7) in c is the singular proposition (7p).

(7) That spy is smart.

(7p) <Boris, being smart>.

(7p) is true at a world w iff Boris is smart at w . It does not matter in the least whether Boris is a spy at w . Thus (8) expresses a true proposition in Natasha’s context c .

(8) Possibly: that spy exists but fails to be a spy.

Notice that the sentence embedded in (8), namely sentence (9), expresses a false proposition (or at least an untrue proposition) at every context (in every structure), including Natasha’s context.

(9) That spy exists but fails to be a spy.

¹⁵Simple demonstratives are not my main concern here, but I want to note that the Singular Content Theory can be extended to them. On one extension, the underlying syntax of the simple demonstrative ‘that’ is the same as that of complex demonstratives, roughly [that_{[CNP]]], where CNP is a common noun phrase. The common noun phrase constituent is either empty, or contains a covert constituent whose semantic content, in any context, is the property of being a thing. On either option, the entire simple demonstrative phrase can end up with the same (functional) linguistic meaning as the complex demonstrative ‘that thing’. On another view, the simple demonstrative ‘that’ has a different linguistic meaning from the determiner ‘that’ that appears in complex demonstratives; this linguistic meaning is a partial function from contexts to objects which, at every context c , delivers the demonstratum (if any) of c .}

Nonetheless, the proposition expressed by (8) in Natasha's context is true in the world of her context.

On the Singular Content Theory, complex demonstratives have the same syntactic form as standard quantifier phrases, and so we should expect them to behave syntactically like standard quantifier phrases. Jeffrey King (2001, pp. 16-19) points to phenomena involving antecedent VP deletion and weak crossover to argue that complex demonstratives behave syntactically more like standard quantifier phrases than like proper names. This is consistent with the Singular Content Theory, since it allows complex demonstratives to have the same syntactic form as standard quantifier phrases. Furthermore, if scope ambiguities are determined by syntax, then this theory entails that sentence (10) is scope ambiguous, with disambiguations indicated in (10₁) and (10₂).¹⁶

(10) That spy might have existed but failed to be a spy.

(10₁) It might have been the case that: that spy exists but fails to be a spy.

(10₂) That spy is such that: it might have been the case that: he exists but fails to be a spy.

However, on the Singular Content Theory, these scope ambiguities make no difference to truth conditions with respect to contexts in which the complex demonstrative has a semantic content.

For instance, in Natasha's context, (10₁) and (10₂) express the same propositions as (11₁) and

¹⁶If scope ambiguity for sentences containing standard quantifiers is determined by movement of standard quantifier phrases to sentence initial positions in LF, as May (1985) argues, then we should expect similar movement for complex demonstratives, on the Singular Content Theory. The Singular Content Theory is also consistent with the hypothesis that such movement explains differences between complex demonstratives and proper names with respect to antecedent VP deletion and weak crossover. See Lepore and Johnson 2002 for discussion of the relationship between the syntax and semantics of complex demonstratives.

(11₂), respectively, and thus either both will be true in that context or both will be false in that context.¹⁷

(11₁) It might have been the case that: Boris exists but fails to be a spy.

(11₂) Boris is such that: it might have been the case that: he exists but fails to be a spy.

The Singular Content Theory should lead us to expect speakers who utter sentences containing complex demonstratives in standard circumstances to *assert and pragmatically convey* propositions beyond those semantically expressed by the sentences they utter. For instance, sentence (7) in Natasha's context semantically expresses the singular proposition (7p), which does not have the property of being a spy as a constituent. Yet if Natasha is reasonable, and literally and assertively utters (7) while focusing on Boris, then she entertains the proposition that Boris is a spy, and wants her auditor to do the same. Her utterance also commits her, in some sense, to Boris's being a spy, for that is a necessary condition for 'that spy' to refer and have a semantic content in her context. So Natasha almost certainly asserts, or at least pragmatically conveys, the proposition that Boris is a spy when she utters (7), though spy-hood is no part of the semantic content of the sentence in her context. Natasha may also consider, and

¹⁷Scope ambiguities involving negation do make a difference to truth values in contexts in which a complex demonstrative has no semantic content. Consider the two readings of 'That spy is not smart'.

(a) It is not the case that: that spy is smart

(b) That spy is such that: he is not smart.

In a context *c* in which 'that spy' has no semantic content, 'That spy is smart' expresses an atomic gappy proposition. If atomic gappy propositions are false, then the proposition expressed by (a) in *c* is true, while the proposition expressed by (b) is false. If atomic gappy propositions are neither true nor false, then the proposition expressed by (a) in *c* is either false or neither true-nor-false (depending on how negation works), while the proposition expressed by (b) is neither-true-nor-false. See Braun 1993 and 2005 for a discussion of gappy propositions, negation, and truth values.

may in some rather strong sense be committed to, the *descriptive* proposition expressed by (12).

(12) The spy who is identical with Boris is smart.

So Natasha might well assert or pragmatically convey the descriptive proposition semantically expressed by (12), as well. Thus when Natasha assertively utters ‘That spy is smart’, she not only asserts its semantic content, but (probably) also asserts or pragmatically conveys the propositions semantically expressed by (12) and ‘Boris is a spy’.

4. Some Attractions of the Singular Content Theory and a Brief Comparison with Other Theories

Many theorists have the strong intuition that complex demonstratives are singular terms. Many assume this without mentioning it, and some slide without comment from the claim that simple demonstratives are singular terms to the claim that complex demonstratives are.¹⁸ Thus the Singular Content Theory’s claim that complex demonstratives are singular terms is an attractive feature of it.

The Singular Content Theory recognizes other similarities between simple and complex demonstratives. Consider the simple demonstratives ‘he’ and ‘she’. They are (according to most semanticists) singular terms whose referents are restricted, by semantics, to males and females, respectively. Yet (on most semanticists’ views) their semantic contents do *not* include the properties of being male and being female. Similarly for complex demonstratives on the Singular Content Theory: the referent of ‘that dog’, in a context, is required by semantics to be a

¹⁸See McGinn 1981, p. 160; Schiffer 1981, pp. 45-46; and Perry 1997, p. 595; Perry 2000, pp. 364-370.

dog, but the property of being a dog does not appear in its semantic content. If a language contains terms that function semantically as ‘he’ and ‘she’ do, then we would naturally expect that same language to contain terms that function the way that complex demonstratives do on the Singular Content Theory. For if speakers find it useful to have directly referential terms whose semantic contents are constrained by gender properties, then they should also find it useful to have directly referential expressions whose singular semantic contents are constrained by other properties.

The Singular Content Theory gains in attraction when it is compared with rival theories that deny that complex demonstratives are directly referential. In other papers (Braun 1995, forthcoming), I provide detailed comparisons between my theory and several other theories. Here I will provide just a few brief remarks. On the first rival theory that I will consider here (drawn more or less from Richard 1993), the contents of complex demonstratives include both the semantic contents of their common noun phrases and the individual objects to which they, intuitively speaking, refer. For instance, the semantic content of (13), in a context *c* in which Boris is the demonstratum, is roughly the same as that of (14).

(13) That spy is smart.

(14) Boris is a spy and is smart.

(The semantic content of (13) may differ from that of (14) in structure, but nevertheless contains spy-hood as a constituent and attributes it to Boris.) On a second rival theory (drawn roughly from Lepore and Ludwig 2001), complex demonstratives are quantifier phrases that are, at least roughly, synonymous with definite descriptions containing the simple demonstrative ‘that’. For instance, (13) has the same linguistic meaning (or character) as (15), and its content in *c* is

roughly the same as that of (16).

(15) The thing that is a spy and is identical with *that* is smart.

(16) The thing that is a spy and is identical with Boris is smart.

Both rival views have modal difficulties. Consider sentence (17), on a (natural) reading in which ‘that spy’ takes narrow scope with respect to the modal operator.

(17) It might have been the case that that spy failed to be a spy.

(17) expresses a true proposition, on this reading, in a context *c* in which Boris is the demonstratum and he is a spy (in the world of *c*). The Singular Content Theory agrees, for it says that the semantic content of (17) in *c* (on this reading) is the same as that of (18), which is true. However, on the first rival theory, the content of (17) in *c* (on this reading) is the same as that of the false (19). On the second rival theory, its content in *c* (on this reading) is the same as that of the false (20) (reading the definite description with narrow scope).

(18) It might have been the case that Boris failed to be a spy.

(19) It might have been the case that Boris is a spy and failed to be a spy.

(20) It might have been the case that the thing that is a spy and identical with Boris failed to be a spy.

In reply to this criticism, advocates of the rival theories might admit that (17) is false in *c* on its narrow scope reading, but they may point out that it is true in *c* on the reading in which ‘that spy’ takes wide scope over the modal operator. According to the first rival theory, (17), on its wide scope reading, expresses in *c* roughly the same proposition as (21). According to the second rival, (17), on its wide scope reading, expresses in *c* roughly the same proposition as (22).

(21) Boris is a spy and such that it might have been the case that he failed to be a spy.

- (22) The thing that is a spy and identical with Boris is such that: it might have been the case that he failed to be a spy.

Both of these propositions are true. The rival theorists might claim that our intuition that (17) is true in *c* on its narrow scope reading is due to our confusing this reading with the wide scope reading.

But it is unlikely that we become confused about scope in the way the reply says, for the natural reading of (17) is the narrow scope reading. Even if we do typically become confused in this way, the rival views still entail that the narrow scope reading of (17) is false in *c*. Yet even after careful reflection (17) seems to lack a reading that is false in *c*. Furthermore, we can virtually eliminate the possibility of scope confusions by using a propositional term, as in (23).

- (23) The proposition that that spy failed to be a spy might have been true.

The only reasonable reading of (23) is one on which ‘that spy’ takes narrow scope. On this narrow scope reading, (23) is true in *c*, which is consistent with the Singular Content Theory, but the rival views entail that (23) is false in *c* on this reading. Consider also the non-modal sentence (24).

- (24) That spy failed to be a spy.

Though this expresses a proposition in *c* that is false in the world of *c*, this same proposition is true at some other possible worlds. This is consistent with the Singular Content Theory, but the rival views entail that the proposition that (24) expresses in *c* is false at all worlds.

I present further criticisms of these and other rival theories in other work (Braun 1995, forthcoming).

5. Objections from Logic and Analyticity

I now turn to objections to direct reference theories of complex demonstratives.

The first objection claims that direct reference theories get the logic of complex demonstratives wrong. The objection claims that (25) is a logical truth and that (26) is a logically valid argument.

(25) If that spy is smart, then something is a spy and is smart.

(26) That spy is smart. Therefore, something is a spy and is smart.

But (the objection continues) consider a context c in which Boris is the demonstratum. On direct reference theories, (25) in c expresses the proposition that if Boris is smart, then something is a spy and is smart. But this proposition is not necessary. Therefore (the objection concludes), sentence (25) is not a logical truth on direct reference theories. A parallel objection applies to argument (26): the proposition expressed by the premise in c does not necessitate the proposition expressed by the conclusion in c .¹⁹

Suppose that direct reference theorists grant that (25) is a logical truth.²⁰ They

¹⁹I have heard objections of this sort many times in discussion. Lepore and Ludwig (2001, pp. 212-213) may endorse the objection that appeals to argument (26), though I am not entirely sure. Braun (1994, 1995) briefly discusses logical truths containing complex demonstratives. My reply here draws from those discussions. Borg (2000) and Salmon (2002) also discuss similar issues in logic and analyticity.

²⁰But *should* they grant that (25) is a logical truth? Is it intuitively obvious that (25) is logically true? Consider a context c in which there is no demonstratum, or there is one but it is not a spy. Does the antecedent of (25) have a truth value in c ? If it does not, and the consequent of (25) is false in c , then (25) is neither true nor false in c , and so it is doubtful that (25) is a logical truth. Since I am, for the moment, granting that (25) is a logical truth, I will (for the moment) assume that the antecedent of (25) is false in contexts like c . This is consistent with the Singular Content Theory if atomic gappy propositions are false (rather than truth-value-less). See note 22. Adding the sentence 'that spy exists' (or a similar sentence) to the antecedent of (25) does not produce a sentence that is *indubitably* a logical truth, for it is reasonable to doubt

nevertheless have a straightforward reply to this objection: it incorrectly assumes that all logically true sentences express necessary truths in all contexts, and that the premises of all logically valid arguments express, in all contexts, propositions that necessitate the propositions expressed by their conclusions, in those contexts. But this is not so for sentences containing indexicals: recall ‘I exist’. It is easy to argue that (25) and (26) are logically valid on direct reference theories, given an appropriate notion of logical truth and validity for demonstratives. Consider any context c in any structure appropriate for indexicals. If the antecedent of (25) is true in c in that structure, then the demonstratum of c satisfies both ‘spy’ and ‘smart’ in the world of c in that structure.²¹ Therefore, the consequent of (25) is also true in c in that structure. Thus (25) is true in every context in every structure. So (25) is a Kaplanian logical truth, even though in all contexts c in the intended structure, the semantic content of (25) in c is a possibly false proposition.²² For similar reasons, argument (26) is logically valid: for all contexts in all

that ‘that spy exists’ has a truth value in the previous context c . I mistakenly overlooked such issues in Braun 1994.

²¹Not all direct reference theorists would accept this claim. Some might hold (contrary to the Singular Content Theory) that the content of ‘that spy’ in c is the demonstratum of c even when the demonstratum is not a spy in the world of c . Such direct reference theorists could not reply to the objections from logic in the way I do here.

²²My argument (un-obviously) assumes that if the antecedent of (25) is not true in a context, then it is false in that context, and so assumes that (25) has a truth value in all contexts. On the Singular Content Theory, the antecedent of (25) expresses an atomic gappy proposition in contexts (and structures) in which there is no demonstratum, or the demonstratum does not satisfy ‘spy’ in that context (and structure). Thus my argument for the logical truth of (25) is consistent with the Singular Content Theory only if atomic gappy propositions are false (in all worlds in all structures). If atomic gappy propositions are neither true nor false, then the antecedent of (25) is neither true nor false in contexts of the previous sort, and so (25) itself is neither true nor false in some such contexts (at least in those in which the consequent of (25) is false), and so (25) is not a Kaplanian logical truth. I accept this consequence, for the reasons I give in note 20.

structures, if the premise of (26) is true in that context in that structure, then so is the conclusion.²³

A second, related objection claims that the following conditional is analytic.²⁴

(27) If that bachelor is smart, then something is unmarried and smart.

The critic might claim that if (27) is analytic, then it expresses a necessary truth. But on direct reference theories, (27) expresses a contingent truth in all contexts, for instance, in a context *c* in which Boris is the demonstratum and he is a bachelor in the world of *c*. In reply, a direct reference theorist could concede that (27) is analytic, and yet argue that, just as some indexical sentences are logically valid and yet express contingent propositions in some contexts, so some indexical sentences are analytically true and yet express contingent propositions in some contexts. (If logical truth is a sort of analyticity, then this was already shown above.) Consider the popular (Carnapian and Montagovian) theory of analyticity, on which a sentence is analytic iff it is true in every structure that satisfies appropriate *meaning postulates*, such as ‘Necessarily, every bachelor is unmarried’. Truth in a structure that is appropriate for a logic of demonstratives amounts to truth in all contexts in such a structure. The previous meaning

²³Though I have doubts about the validity of (25), I am happy to grant the logical validity of argument (26): *if* its premise is true in a context (in a structure), then its conclusion is true in that context (in that structure). This is compatible with the view that atomic gappy propositions are neither true nor false, for the premise is true in a context only if the premise does not express a gappy proposition in that context.

²⁴Thanks to Kent Bach for this objection. Once again, it is reasonable to doubt whether (27) is analytic, because it is reasonable to doubt that its antecedent has a truth value in contexts in which there is no demonstratum or the demonstratum is not a spy. See notes 20 and 22. We could instead consider an objection that claims that the premise of the following argument “analytically entails” its conclusion: ‘That bachelor is smart. Therefore, something is unmarried and smart’.

postulate is true in a context c , in such a structure, only if the following holds: if an object falls in the extension of ‘bachelor’ in c in that structure, then it falls in the extension of ‘unmarried’ in c , in that structure. Let c be such a context in a such structure. Then the antecedent of (27) is true in c only if the demonstratum of c falls in the extension of ‘bachelor’ and ‘smart’ in c . Therefore, the demonstratum of c falls in the extension of ‘unmarried’ in c , and the consequent of (27) is true in c . Thus the analyticity of (27) is compatible with direct reference theories, even though (27) expresses a possibly false proposition in some contexts.²⁵

6. Objections from Non-Demonstrative Uses

I said at the end of section one that I would be setting aside the bound-variable and anaphoric types of use of complex demonstratives. I had in mind examples like (28) and (29) (the subscripts indicate semantic dependence of some sort).

(28) Every professor₁ has a student who thinks that that professor₁ is boring.

(29) A clerk in a convenience store was sitting behind a cash register, while another clerk₁ was walking towards the store’s freezer. That clerk₁ stepped on a wad of chewing gum.

A critic might argue that direct reference theories are incomplete because they do not deal with these non-demonstrative types of use. Such a critic might claim that setting aside such uses is poor methodology. He might further claim that we should expect, and seek, a *uniform* account of

²⁵My argument here assumes that the antecedent of (27) has a truth value at every context in every structure. This is consistent with the Singular Content Theory only if atomic gappy propositions are false. If they are neither true nor false, then I am content to say that (27) is not analytic. See notes 20, 22, and 24.

all three types of use of complex demonstratives, on which they function in semantically the same way on all three uses (for instance, as quantifier phrases). He might hold that this is the only way to avoid the implausible view that complex demonstratives are ambiguous. He might claim that direct reference theories of the demonstrative use are inconsistent with finding a uniform account, for complex demonstratives on their bound variable and anaphoric uses do not contribute individuals to the semantic contents of sentences and discourses.²⁶ The critic might conclude that on a comprehensive theory, complex demonstratives never function as directly referential terms.²⁷

The critic is correct when he says that direct reference theories do not provide a theory of the bound-variable and anaphoric uses. But the other claims are mistaken or dubious. The non-demonstrative uses of complex demonstratives do not now give us reason to reject direct reference theories of their demonstrative use, for (a) it is (currently) a live theoretical possibility that the correct comprehensive theory of complex demonstratives is an ambiguity theory, and (b) it is (currently) a live theoretical possibility that direct reference theories of the demonstrative use are compatible with a uniform comprehensive theory on which complex demonstratives are unambiguous. Thus it is methodologically reasonable to concentrate on a semantics of the

²⁶This may be unclear in (29). But the critic could make the same point with the following similar modal sentence: 'It might have been the case that a clerk was sitting behind a cash register and another clerk₁ was walking towards the store's freezer and that clerk₁ stepped on a wad of gum'. The occurrence of 'that clerk' in this sentence seems not to contribute an individual to its semantic content. See King 2008.

²⁷King (2008, p. 114-116) presents examples of the bound variable and anaphoric uses of complex demonstratives and argues that they show that direct reference theories are at least incomplete. He seemingly thinks that this is a (non-conclusive) reason to think that direct reference theories are wrong about the demonstrative use of complex demonstratives. King (2001) argues against ambiguity theories.

demonstrative use alone. I explain below by comparing complex demonstratives with pronouns.

The pronoun 'he' has a demonstrative type of use, which appears in utterances of (30) in which the speaker is focusing on a particular male.

(30) He is boring.

But 'he' also has a bound variable use and an anaphoric use, illustrated in (31) and (32).

(31) Every male professor₁ has a student who thinks that he₁ is boring.

(32) A clerk in a convenience store was sitting behind a cash register, while another clerk₁ was walking toward the store's freezer. He₁ stepped on a wad of chewing gum.

The three uses seem rather different, so it is methodologically reasonable for a theorist to begin by giving different theories of them. This is, in fact, what theorists have done. Most theorists hold that 'he' on its demonstrative use is directly referential, and that 'he' on its bound variable use functions as a bound variable. There are two popular kinds of view of the anaphoric use. One kind of view says (roughly) that on the anaphoric use, 'he' functions like a variable that is bound by a hidden quantifier. Another says (roughly) that on the anaphoric use, 'he' functions as though it were an abbreviation for a definite description (in (32) it might abbreviate 'the clerk who was cleaning a window').²⁸ Thus current theories of the three uses of 'he' attribute three quite different semantic functions to it. We might naturally conclude that 'he' is ambiguous, and

²⁸Variants of the bound variable view of the anaphoric use of 'he' are presented by Heim (1982), Kamp (1981), Kamp and Reyle (1993), and Salmon (2006). Variants of the definite description view are presented by Evans (1977, 1980) and Neale (1990). There are many other views, including that of King 1987.

that English contains three distinct lexical items, which we might label ‘he₁’, ‘he₂’, and ‘he₃’.²⁹ But further reflection might lead us to consider whether these theories are compatible with a comprehensive theory that says that ‘he’ is an unambiguous term with a single linguistic meaning. Such a uniform comprehensive theory might say (for instance) that ‘he’ has a single context-sensitive linguistic meaning that can determine, in a context, three distinct semantic functions and three distinct sorts of semantic content, depending on the intentions of the context’s agent.³⁰ The differences between such a uniform *indexical* theory and a non-uniform ambiguity theory might be subtle, for speakers’ intentions play crucial, but subtly different, roles in both. On a uniform theory, the intentions of a context’s agent determine the semantic function and content of ‘he’ in that context. On an ambiguity theory, the intentions of a context’s agent who utters the phonetic sequence ‘he’ determine whether she is uttering the lexical items ‘he₁’, ‘he₂’, or ‘he₃’ in that context. Advocates of either sort of view would have some explaining to do. Advocates of a uniform theory would need to explain why their theory is not simply an ambiguity theory in disguise. (Critics might compare the uniform theory with the clearly incorrect theory that ‘bat’ is an unambiguous context-sensitive term.) Advocates of an ambiguity theory would need to explain why ‘she’ is ambiguous in exactly the same way as ‘he’. (Surely

²⁹Some theorists might claim to treat all of the uses as variable uses: the demonstrative use is a *free* variable use, the bound variable use is a bound variable use, and the anaphoric use is also a bound variable use in which the binder is a hidden quantifier. This is a uniform theory, but an implausible one, for the demonstrative use of ‘he’ is not plausibly analyzed as a free variable use. A genuine free variable varies in its semantic content and extension under different assignments within a single context. But the semantic content and referent, in a context, of ‘he’ on its demonstrative use is determined by the agent’s focus, and so does not vary under different assignments in that context. See Kaplan 1989b, 593.

³⁰If I were to try to formulate such a theory, I would begin with a three-level theory of meanings for demonstratives of the sort I present in my 1996.

this is not just a remarkable coincidence.) Perhaps it will turn out that the best comprehensive theory of 'he' is neither clearly an ambiguity theory nor clearly a uniform theory, according to our current notions of ambiguity. In any case, we have no particular reason now to think that the correct comprehensive theory is a uniform theory rather than an ambiguity theory.

Let us return to complex demonstratives. Complex demonstratives have three types of use. It is methodologically reasonable for theorists to treat each separately, at least initially. It may turn out, for all we know now, that the best theories of the three uses of complex demonstratives will parallel the best theories of the three uses of 'he'. For instance, it may turn out that the most plausible theory of the demonstrative use of complex demonstratives is directly referential, the most plausible theory of the bound variable use treats complex demonstratives as bound variables, and the most plausible theory of the anaphoric use treats complex demonstratives as (e.g.) abbreviations of definite descriptions. These theories of the three uses might be compatible with a comprehensive uniform (indexical) theory on which complex demonstratives are unambiguous. But it seems just as likely that the best comprehensive theory will say that complex demonstratives are (subtly) ambiguous. It is also possible that the best comprehensive theory will be neither clearly a uniform theory nor clearly an ambiguity theory. Thus we have little reason now to think that uniform theories are more likely to be correct than ambiguity theories.³¹ Therefore, it is methodologically reasonable to begin our study of complex

³¹King (2001) argues against ambiguity theories that say that complex demonstratives have both directly referential and quantificational meanings. The above remarks suggest that other sorts of ambiguity theories are possible. King's main argument against ambiguity theories appeals to antecedent VP deletion and weak crossover effects (2001, 156-9). But we saw earlier (section 3) that these phenomena are consistent with direct reference theories. Therefore, they are very likely to be consistent with reasonable ambiguity theories.

demonstratives by considering the three types of use separately. Hence we can reasonably set aside the bound-variable and anaphoric uses of complex demonstratives when we are focusing on their demonstrative use.

7. An Objection from Belief Ascriptions and NDNS Uses

Jeffrey King (2001) presents a number of objections to direct reference theories of demonstratives. I turn now to his central objections.

7.1. *The Objection*

King's first objection concerns belief ascriptions. It is based on the following example. (See King 2001, pp. 3-4. All subsequent page number references are to this work.) Suppose that Greg is a math student who has just learned from his teacher that he scored very poorly on a recent exam. Suppose his teacher tells him that exactly one student scored one hundred on the exam. Then Greg might utter (33).

(33) That student who scored one hundred on the exam is a genius.

Greg cannot point at the relevant student and has no particular student "in mind". So according to King, this is a *No Demonstration, No Speaker-Reference, or NDNS*, use of a complex demonstrative. Now imagine that Harry is a classmate of Greg's, and overhears the teacher tell Greg that exactly one student scored one hundred on the exam. Harry then hears Greg utter (33), and so Harry utters (34).

(34) Greg believes that that student who scored one hundred on the exam is a genius. Harry's use of 'that student who scored one hundred on the exam' is also an NDNS use. King

says that (34) “seems clearly true in such a case” (p. 3). Suppose that Susan is the student who scored one hundred on the exam. King argues that on direct reference theories, if (33) expresses any proposition at all in Greg’s context, it expresses the singular proposition that Susan is a genius. Similarly, on a direct reference theory, if (34) semantically expresses any proposition at all in Harry’s context, it semantically expresses a proposition that attributes to Greg belief in the singular proposition that Susan is a genius. But King claims that Greg does not believe a singular proposition about Susan, because “Greg, after all, appears to have only *general* beliefs, and has no idea who scored one hundred percent on the exam” (p. 4). So if direct reference theories are true, then the attitude ascription (34) does not express a true proposition in Harry’s context. So direct reference theories are incorrect.³²

King’s objection relies on claims about singular belief and (less obviously) on claims about the connections among semantic content, assertion, and belief. As a result, direct reference theorists can reply in many different ways. I shall present two detailed replies, both of which are consistent with the Singular Content Theory. The first detailed reply, which is the one that I favor, says (contrary to King) that Greg believes a singular proposition regarding Susan. The second reply agrees with King’s claim that Greg does not believe a singular proposition about Susan, but denies King’s claim that if direct reference theories are true, then (34) attributes to Greg belief in a singular proposition. After presenting these replies, I shall briefly sketch a few more possible replies that are available to direct reference theorists.

³²On King’s positive view, Harry ascribes belief in a general proposition to Greg: the ascription says (roughly speaking) that Greg believes that the student who scored one hundred on the exam is a genius. I criticize this aspect of his view in Braun (forthcoming).

7.2. *First Reply*

King's objection says that Greg is not in a position to believe the singular proposition that Susan is a genius. I disagree. Both of our claims are controversial: some philosophers would agree with me, while others would agree with King.³³ This is not the place to adjudicate among views on singular belief. I will instead simply present some of my reasons for thinking that Greg believes a singular proposition about Susan.

Nearly all philosophers who accept belief in singular propositions hold that an agent can have singular beliefs about objects with which she has rather thin connections: for instance, a speaker who has heard or read sentences containing 'Heraclitus' can have singular beliefs about Heraclitus. Some of these philosophers also hold that an agent can have singular beliefs about objects when the relevant connections are thinner. For instance, Le Verrier used the definite description 'the planet perturbing the orbit of Uranus' to fix the reference of the name 'Neptune' before he or anyone else directly observed Neptune. He then freely used 'Neptune' in his speech and thought. Some philosophers, including myself, think that, as a result, Le Verrier had singular beliefs about Neptune, before anyone directly observed Neptune.³⁴

Greg's case is similar to Le Verrier's. Le Verrier stood in significant causal relations

³³Philosophers who accept singular propositions vary in how liberal they are about the conditions under which an agent believes a singular proposition. Kaplan (1989b) and Manley and Hawthorne (in progress) are quite liberal, at least as liberal as I am. Jeshion (2001, 2002, 2004) is somewhat less liberal. Salmon (1987/88, 2004) and Soames (2002, 2003, 2005a) are still less liberal, while Donnellan (1979) and Bach (1987/1994) are rather conservative. King seems to fall on the conservative end of this spectrum.

³⁴I may be departing somewhat from the actual historical facts about Le Verrier. Jeshion's (2004, 597-8) discussion of a similar case involving Le Verrier, and Salmon's discussion of 'Smith's murderer' (Salmon 2004, 246-7), suggest they would agree with me about the above (hypothetical) case, perhaps depending on details.

with Neptune, for Neptune caused perturbations in Uranus, which caused Le Verrier to think that exactly one planet was perturbing Uranus's orbit. Greg stands in similarly significant causal relations to Susan, for Susan causes her teacher to think that she scored one hundred on the exam, which causes her teacher to say to Greg that exactly one student scored one hundred, which causes Greg to believe that exactly one student scored one hundred on the exam. So it is entirely reasonable to think that if Le Verrier was in a position to believe singular propositions concerning Neptune, then Greg is also in a position to believe singular propositions about Susan.

One difference between Le Verrier and Greg is that Le Verrier introduced a name for Neptune, using a definite description to fix its reference. Though Greg is in a position to use the description 'the student who scored one hundred on the exam' to introduce a (directly referential) name for Susan, he does not do so (not even mentally, let us suppose). But if Greg can use a description to fix the reference of a directly referential name, then he can also use that same description, or its semantic content, to fix the reference of a directly referential complex demonstrative. This is, in fact, what he does. His using the description (or its content) to fix the referent of the complex demonstrative consists in his having the right sorts of intentions. One reason to think that he has the right sorts of intentions is that if he were asked "Who do you mean by 'that student who scored one hundred on the exam'?", he would say 'I mean the student who scored one hundred on the exam' or something similar. Now if Greg had used the above description to fix the reference of a directly referential *name*, then he would have singular beliefs about Susan. Therefore if he uses the description (or its content) to fix the reference of a directly

referential complex demonstrative (as he in fact does), then he has singular beliefs about Susan.³⁵

An advocate of King's theory could reply by using a more extreme example, as in the following example modeled on Kaplan's (1968) case of 'Newman-1'. Suppose that John correctly believes that there will be a first-born child of the 22nd century. He thinks that all newborns will be Chinese in the 22nd century, so he sincerely says 'That first-born child of the 22nd century will be Chinese'. Mary may then say 'John believes that that first-born child of the 22nd century will be Chinese'. A King-ian might claim that Mary's ascription is true. He might argue that if a direct reference theory is true, then Mary's ascription ascribes belief in a singular proposition to John. He might then claim that John does not believe any such singular proposition, for he cannot perceive or point at the 22nd-century baby, he has no particular baby "in mind", and he stands in no significant causal relations to that baby. So the critic might conclude that direct-reference theories are incorrect.

In reply, I say that John does believe a singular proposition about the 22nd-century baby. Consider the following analogous case. Suppose that Scarlett sincerely says 'Tomorrow is another day', and suppose that *D* is the day after she speaks. Then, I hold, Scarlett believes a singular proposition about *D* (namely, that *D* is another day), though there are no causal connections reaching from *D* to her, and she is in no obvious way acquainted with *D*. I suspect

³⁵A critic might argue that sentence (33), in Greg's context, cannot express the singular proposition that 'Susan is a genius' expresses, in his context, for Greg might understand both, and assent to (33) (in his context) and yet dissent from, or remain agnostic about the truth of, 'Susan is a genius'. This is a classic "Frege-puzzle" objection to direct reference theories of proper names and demonstratives. I cannot take space to deal with such objections here, but in my opinion, direct reference theorists have strong replies to them. See Salmon 1986, Braun 1998, Jeshion 2001, and Soames 2002.

that many philosophers would agree with me.³⁶ But John's connections with the first-born child of the 22nd century are as robust as Scarlett's connections with day *D*. So if Scarlett believes a singular proposition about *D*, then John believes a singular proposition about the first-born child of the 22nd century.

Some philosophers would agree with my claims about singular belief in the previous two cases, while others would disagree. As I indicated earlier, the matter is controversial. Therefore, I will not rest my defense of direct reference theories on these claims (and I advise opponents of direct reference not to rest much weight on the opposing claim). I now turn to a second reply, one which does not rely on the claim that Greg (or John) believes a singular proposition.

7.3. *Second Reply*

Suppose that a direct reference theorist (other than me) concedes that Greg does not believe the singular proposition that Susan is a genius.³⁷ Suppose that this direct reference theorist accepts my particular version of direct reference, the Singular Content Theory. Then he could say that (33) semantically expresses a *gappy* proposition in Greg's context. Further, he could say that if Greg is sincere and literal when he utters (33), then he asserts and believes that

³⁶Perry's (2000, 372-3) discussion of 'tomorrow' strongly suggests that he would agree that Scarlett believes a singular proposition about *D*. David Manley presented an example like mine at a session on *de re* belief at the 2007 Pacific APA meetings. I used a similar example in correspondence with Scott Soames about an early version of his 1998. I have been told by a reliable source that philosophers discussed *de re* belief and 'tomorrow' in the 1970's. I find this easy to believe, but I have not been able to find a published discussion.

³⁷Or if the King-ian switches to the example of John, then suppose that a direct-reference theorist concedes that John cannot believe a singular proposition concerning the first-born child of the 22nd century. I will stick to the example of Greg from here on.

gappy proposition. (Of course, Greg does not realize that the proposition is gappy.³⁸ In the next sub-section, I will consider the possibility that Greg is not speaking literally when he utters (33).) (33) also semantically expresses a gappy proposition in Harry's context. Therefore, the 'that'-clause of the belief ascription (34) refers to that gappy proposition in Harry's context, and so (34) in his context correctly attributes belief in a gappy proposition to Greg.

One might worry that this reply has counter-intuitive consequences. First, (33) seems to be true in Greg's context. But if the above gappy-proposition reply were correct, then (33) would not be true in Greg's context, because atomic gappy propositions are untrue. Second, one might think it obvious that Greg believes *something* that is true, and concerned with getting a score of one hundred on the exam and being a genius, and one might think that Harry's ascription correctly ascribes belief in a true proposition of this sort to Greg. But if (33) expressed a gappy proposition, the 'that'-clause in (34) would refer to an untrue gappy proposition, and so (34) would not ascribe belief in a true proposition to Greg.

The above direct-reference theorist can reply to these worries by pointing out that Greg believes, and either asserts or conveys, a *descriptive* proposition, when he utters (33). (35) semantically expresses a true descriptive proposition in Greg's context.

(35) The student who scored one hundred on the exam is a genius.

Greg obviously entertains and believes this descriptive proposition when he utters (33). Moreover, Greg seems committed to its truth in a way appropriate for assertion, or at least pragmatic conveyance. So it is plausible to think that he utters (33) partly because he has this

³⁸For more on believing a gappy proposition that one does not believe to be gappy, see Braun 1993 and 2005.

descriptive thought, and that when he utters (33) he asserts or pragmatically conveys that descriptive proposition. So Greg asserts, or at least conveys, at least two propositions when he utters (33), an untrue gappy proposition and a true descriptive proposition. Those who are reading about Greg know that he believes, and is entertaining, the descriptive proposition expressed by (35), for the example makes this obvious. Those who think that (33) is true in Greg's context are not clearly distinguishing between the untrue gappy proposition that (33) semantically expresses and the true descriptive proposition that Greg (merely) believes, and asserts or conveys. This explains the intuition that (33) is true in Greg's context, even though (33) semantically expresses an untrue gappy proposition.³⁹ This also explains why some have the intuition that Greg believes something true which concerns scoring one hundred on the exam and being a genius: the proposition expressed by (35) is true, and Greg clearly believes it. Moreover, the descriptive belief attribution (36) is obviously true in Harry's context.

(36) Greg believes that *the* student who scored one hundred on the exam was a genius. Given Harry's beliefs about Greg, it is plausible to suppose that Harry asserts or conveys the semantic content of (36) when he utters the non-descriptive (34). So when Harry utters (34), he conveys at least two true propositions: the gappy one semantically expressed by (34) and the descriptive proposition semantically expressed by (36). Thus the direct reference theorist can account for the intuition that Harry ascribes belief in a true proposition to Greg when he utters (34).

³⁹There is another explanation of the intuition: speakers tend to hold the view that I favor concerning (33), namely that it expresses a completely normal (non-gappy) true proposition.

7.4. *Yet More Replies, and a Conclusion*

Direct-reference theorists have yet more options for replying to King's argument. Some might want to say that (33) semantically expresses a gappy proposition in Greg's context, but deny that Greg asserts or believes this gappy proposition when he utters (33), because he (at least tacitly) realizes that the complex demonstrative does not refer in his context. But Greg does believe the descriptive proposition expressed by (35), and he utters (33) in order to assert or convey that descriptive proposition. Thus his utterance of (33) is, in a certain sense, non-literal. (Compare this view of (33) with similar views about utterances of incomplete definite descriptions, such as Bach 2004 and Soames 2005b.) Harry similarly uses (34) to assert or convey the proposition that Greg believes that descriptive proposition. Other direct-reference theorists might instead hold that (33) semantically expresses a singular proposition about Susan, and that Greg asserts this proposition when he utters it, but claim that Greg does not believe that proposition. (Salmon [2004] advocates this sort of view for Kaplan's (1968) example of Newman-1.) Harry's ascription is false, but it is easy to confuse its semantic content with the semantic content of the descriptive (36). Yet other direct-reference theorists might want to hold that (33) fails to express a proposition in Greg's context and (34) fails to express a proposition in Harry's context. But they could say that Greg and Harry believe the above descriptive propositions, and convey these descriptive propositions when they utter (33) and (34).⁴⁰

Summarizing: King's Objection from Belief Ascriptions and NDNS Uses relies on

⁴⁰Obviously, speakers and hearers do not grasp these conveyed propositions by first grasping the non-existent propositions that the sentences semantically express. But something happens in their minds that is similar to what happens in the minds of those who grasp conveyed propositions after grasping semantically expressed propositions.

controversial claims about belief in singular propositions, and various controversial claims about the relations among semantic content, assertion, and belief. This gives direct-reference theorists many options for replying to King's objection.

8. An Objection from Modality and NDNS Uses

King presents a second objection from NDNS uses, one that appeals to intuitions about modality rather than belief. Suppose that Scott is considering hominid inventions and discoveries, and comes to believe that there was a unique hominid who discovered how to start fires. Scott then utters (37).

(37) That hominid who discovered how to start fires was a genius.

Suppose that Homey was the hominid who (actually) discovered how to start fires, and he was a genius. Then (37) is true in Scott's context, King thinks. King now asks us to evaluate the proposition expressed by (37) in Scott's context at another world w' in which Homey is a genius but did not discover how to start fires. In world w' , the hominid who discovered how to start fires was an idiot who just got lucky. King's intuition is that the semantic content of (37), with respect to Scott's context, is false at world w' . But, King says, direct reference theories entail that in Scott's context (37) expresses the proposition that Homey was a genius. This proposition is true at world w' . Therefore, direct reference theories entails the wrong truth value for (37) at w' .

I do not share King's intuition. I think that (37) semantically expresses, in Scott's context, a proposition that is true at any world in which Homey was a genius, including King's imagined world w' . (More precisely: *if* (37) expresses in Scott's context a proposition that is true

in the actual world, then it expresses a proposition that is also true at King's alternate world w' . If (37) expresses a gappy proposition in Scott's context, then that proposition is either false or neither-true-nor-false at both the actual world and w' .) King's example uses a complex demonstrative in which the common noun phrase strongly suggests unique satisfaction. One can get a (seemingly) uniquely identifying definite description simply by substituting 'the' for 'that'. I therefore suspect that intuitions that run against mine are due to confusions between the singular semantic content of (37) in Scott's context and the descriptive semantic content of (38).

(38) The hominid who discovered how to start fires was a genius.

Scott believes the proposition expressed by (38). He may even pragmatically convey it when he utters (37), and we are likely to be considering that proposition when we read the example. So it may be easy to confuse the propositions expressed by (37) and (38), given the example.

9. An Objection from Quantifying In Uses

9.1. *The Objection*

I turn now to what is perhaps King's most influential argument against direct reference theories. Some sentences contain a standard quantifier phrase that binds a pronoun inside a complex demonstrative. King argues that such sentences raise serious difficulties for direct reference theories. (39) is a typical example that King uses (p. 40).

(39) Every university professor cherishes that first publication of hers.

On one reading of (39), the occurrence of the pronoun 'hers' functions like an occurrence of a variable that is bound by the occurrence of 'every university professor'. This is what King calls a *Quantification In* use of this sentence, or a *QI* use, for short. Another example is (40).

(40) Every father dreads that moment when his oldest child leaves home.

King says that the relevant complex demonstratives in such sentences (on such readings) do not refer to any particular individual in any context. So the contents of the complex demonstratives in these sentences, in contexts, cannot be individual objects. But if this is so, then direct reference theories cannot assign semantic contents to these sentences, in any contexts. Yet these sentences do have semantic contents in contexts. So direct reference theories are incorrect.⁴¹

The above argument assumes that if it is not the case that the semantic content of a complex demonstrative (in a context) is an individual, then a direct reference theory cannot assign a semantic content to a sentence in which the complex demonstrative appears. This assumption is incorrect. According to the Singular Content Theory, QI sentences such as King's (39) have semantic contents in all contexts, even though the complex demonstratives that occur in them do not have semantic contents in those contexts. I describe the semantic content of (39) on this theory below.⁴²

⁴¹This is a rough explication of King's argument. Rather than enter into the details of King's argument here, I will concentrate on whether direct reference theories can give plausible semantic analyses of QI sentences like (39). Salmon (2006) attributes a specific argument from QI uses to King, and argues that it is unsound. (I agree with Salmon that this specific argument is unsound.) King (2008) replies to Salmon's criticisms.

⁴²I noted in section 6 that complex demonstratives have three types of use, namely demonstrative, bound variable, and anaphoric. The occurrence of 'that first publication of hers' in (39), on the type of use that King has in mind, is not plausibly construed as an instance of the bound variable type of use, for the bound occurrence of 'hers' occurs *inside* the occurrence of the complex demonstrative. Nor is it plausibly an instance of the anaphoric use. I shall assume here that it is an instance of the demonstrative type of use, and I shall extend the Singular Content of the demonstrative use to it. This assumption may seem strained, because King seems to have in mind utterances in which the speaker is not focused on any particular publication. But as we will see, such a speaker might utter (39), while demonstratively using the complex demonstrative, in order to pragmatically convey a descriptive proposition. Some direct-reference theorists might prefer to respond to (39) by holding that there is a fourth type of use of complex demonstratives,

Before turning to semantics, I want to note that many speakers, including myself, find King's QI sentences odd. I have a strong urge to substitute 'the' for 'that' in nearly all such sentences, as do many other speakers. (I suspect that this is why many direct reference theorists have ignored such sentences.) However, King and many others find them perfectly fine. We need an explanation of this clash in intuitions. I provide one below.

In what follows, I will first show that, on my theory, (39) has (literal) truth conditions that are extremely unlikely to be satisfied.⁴³ Second, given these strange truth conditions, a person who utters (39) is unlikely to want to assert its (literal) semantic content. Thus someone who utters (39) is likely to want to convey some proposition other than its semantic content. Third, the common noun phrase 'first publication of hers' uniquely identifies a publication, each time a university professor is assigned to 'her' (ignoring the possibility that some university professors have no, or more than one, first publication). Therefore a hearer can figure out what a speaker is likely to *mean* by uttering (39): the speaker means that every university professor cherishes *the* first publication of hers. (Or, better, the speaker means that every university professor cherishes her first publication.) Hence some hearers feel an urge to substitute 'the' for 'that', for the resulting sentence semantically expresses the proposition that the speaker is trying to get across. Fourth, some speakers focus on these conveyed propositions, rather than the semantically expressed propositions. These speakers find QI uses more acceptable than do other speakers.

on which their semantic contents (in a context) are the same of those of certain corresponding definite descriptions. I do not have a knock-down argument against such a four-types-of-use view, but I think that the alleged descriptive use of (39) should be explained pragmatically rather than semantically. See note 48 and the main text below. (Thanks to Nathan Salmon for discussion.)

⁴³On this point, I agree with Lepore and Ludwig (2001, pp. 219-220).

Fifth, these QI sentences have semantic contents that are consistent with direct reference. Sixth, all of this is consistent with saying that the complex demonstratives that occur in the QI sentences have no semantic content in any context.

9.2. *The Truth Conditions of QI Uses of Complex Demonstratives*

Before turning to quantification into complex demonstratives, let us consider an example of quantification into a standard quantifier phrase, as in (41).

(41) Every university professor cherishes some publication of hers.

Consider a reading of (41) in which ‘hers’ functions like a bound occurrence of a variable. Then the occurrence of ‘some publication of hers’ semantically functions like an occurrence of the following semi-formal English quantifier phrase (42).

(42) Some publication of x

(42) has an extension with respect to a context c , world w , and assignment A of an object to the variable ‘ x ’. If A assigns object o to ‘ x ’, then the extension of (42) with respect to an actual-world context c and the actual world, under A , is the set of all sets that contain some publication of o ’s. So the extension of (42) varies from assignment to assignment, even keeping the context and world fixed.⁴⁴

Similar remarks go for complex demonstratives that contain free occurrences of variables, such as (43).

⁴⁴When I write of the extension of a quantifier phrase in a context c , under an assignment A , I mean its extension with respect to c and the world of c , under assignment A . I am assuming a standard semantic view of quantifier phrases on which their semantic contents are properties of properties and their extensions are sets of sets.

(43) That first publication of x .

According to the Singular Content Theory, the extension, and reference, of this phrase will vary from context to context, and also assignment to assignment.⁴⁵ The extension of (43) with respect to a context c , under an assignment A that assigns object o to ‘ x ’, is the demonstratum of c , if the demonstratum of c is a first publication of o in the world of context c . (43) has no extension, and no reference, in c with respect to A if there is no demonstratum of c or if the demonstratum of c is not a first publication of o in the world of context c . So (43) varies in extension from assignment to assignment, even keeping context and world fixed.

For example, consider an actual world context c in which the demonstratum is Angelika Kratzer’s first publication in the actual world. The extension of (43) in c , given an assignment in which Kratzer is assigned to ‘ x ’, is the demonstratum of c , if the demonstratum is a first publication of Kratzer’s. So Kratzer’s first publication is the extension of (43) in c with respect to such an assignment. Now consider (43) *in that same context*, but with respect to a different assignment in which David Kaplan is assigned to ‘ x ’. The extension of (43) with respect to c , under this new assignment, is the demonstratum of c (Kratzer’s first publication), if Kratzer’s first publication is also a first publication of David Kaplan’s. Since it is not, (43) has no extension or reference in this context under this assignment. Finally, consider a context c in which there is no demonstratum. Then (43) will have no extension or reference in c , regardless of which object is assigned to ‘ x ’.

⁴⁵Again, when I say that the extension of (43) at context c , under assignment A , is object o , I mean that its extension with respect to c and *the world* of c , under assignment A , is o . The extension of (43) does not vary from world to world once the context and assignment are fixed, so I shall ignore worlds. On p. 40, and in note 17 on p. 180, King claims that the extension of (43) does vary from world to world. (See also King 2008.) I here disagree with him.

Return now to sentence (39).

(39) Every university professor cherishes that first publication of hers.

Consider a context c in which there is no demonstratum (e.g., a context in which the agent is not focusing on any particular publication, or any other object). (39) is either false or neither-true-nor-false in c . To see this, consider the following semi-formal version of (39).⁴⁶

(44) [Every $x : x$ is a university professor] x cherishes that first publication of x .

(44) is true in context c iff (roughly): for every university professor o , o cherishes the extension of ‘that first publication of x ’ in c when o is assigned to ‘ x ’. But if there is no demonstratum in c , ‘that first publication of x ’ will have no extension in c regardless of what is assigned to variable ‘ x ’. The result is that (44) is either false or neither-true-nor-false in c .

Next, consider a context c' in which the demonstratum is a particular publication p (e.g., a context in which the agent focuses on Kratzer’s first publication). Then (44) is true in context c' iff: for every university professor o , o cherishes the extension of ‘that first publication of x ’ in c' when o is assigned to ‘ x ’. This latter condition holds iff there is an object that is the demonstratum of context c' (which there is, namely publication p) and it is a first publication of every university professor in the world of c' . So (39) is true in c' only if the world of c' is wildly different from the actual world: for instance, if the world of c' is one in which every university professor has the same (single) first publication. If c' is an actual-world context (39) is not true in c' .

It might be useful to compare (39) with (39').

⁴⁶We could instead consider the following semi-formalization, as I do in the Appendix, but this would make no substantial difference to the argument in the text: ‘[Every $x : x$ is a university professor] [that $y : y$ is a first publication of x] x cherishes y '.

(39') Every university professor cherishes that thing which is a first publication of every university professor.

(39) and (39') are true in exactly the same contexts. If c is a context in which there is a demonstratum and it is a first publication of every university professor in the world of c , then both (39) and (39') are true in c . If c has no demonstratum, or there is a demonstratum but it is not a first publication of every university professor of the world of c , then both (39) and (39') are either false or neither-true-nor-false in c .⁴⁷ Clearly (39) and (39') are not true in any actual-world context.

9.3. *The Pragmatics of QI Uses*

Thus on my theory, (39) is untrue in actual-world contexts in which there is a demonstratum. So reasonable speakers who have minimal knowledge of university professors and publications would refrain from asserting the semantic content of (39) in any actual-world context. In that sense, a reasonable speaker would not utter (39) literally in the actual world.

But even so, speakers might be able to use (39) to assert, or otherwise pragmatically convey, something other than (39)'s semantic content. They might, for instance, use (39) to assert or pragmatically convey the descriptive semantic content of (45) or (46).

(45) Every university professor cherishes the first publication of hers.

⁴⁷However, as will become clear below, (39) and (39') semantically express distinct propositions in all contexts, on the Singular Content Theory. In a context in which there is a demonstratum and it is a first publication of every university professor, (39') expresses a singular proposition concerning that publication, while (39) does not express a singular proposition in such a context, as we will see below. In a context in which there is no demonstratum, or there is one but it is not a first publication of every university professor, (39') semantically expresses a gappy proposition, while (39) expresses a non-gappy proposition.

(46) Every university professor cherishes her first publication.

There are two reasons why a speaker who utters (39) might reasonably expect his hearers to entertain the semantic contents of (45) and (46). First, as we noticed in section 3, utterances of sentences containing complex demonstratives usually convey propositions beyond their semantic contents, and sometimes such utterances convey the semantic contents of sentences containing definite descriptions. For instance, Natasha's assertive utterance of 'That spy is smart' while pointing at Boris may, in the right context, pragmatically convey that the spy identical with Boris is smart. An utterance of (39) to convey the propositions expressed by (45) and (46) would extend this type of pragmatic usage to cases of quantified complex demonstratives. Second, and more important, the common noun phrase 'first publication of hers' uniquely identifies a publication relative to any university professor (assuming that all of them have one first publication). So (39) seems especially apt to communicate the descriptive contents of (45) and (46).

The descriptive propositions may be conveyed to a hearer because the hearer engages in some Gricean reasoning: the hearer recognizes that (39) is very unlikely to be literally true (perhaps because the speaker did not demonstrate a publication), and then infers that the speaker wishes to convey some proposition other than its literal content. The speaker could utter (39) with the expectation that the hearer will make such inferences.

But the descriptive propositions may be conveyed to a hearer even if the hearer does not go through such Gricean reasoning. For if speakers frequently use sentences containing quantified complex demonstratives to communicate descriptive propositions, then there can arise a *standardized* practice of using such sentences to pragmatically convey such descriptive

propositions. If there is such a standardized practice, then hearers and speakers can bypass the Gricean reasoning and immediately grasp the conveyed descriptive propositions. Under such conditions, speakers and hearers may not be consciously aware that the uttered sentence is not literally true in their contexts. Compare this with strict Russellian (quantificational) accounts of referential uses of incomplete definite descriptions. On strict Russellian accounts, many sentences containing incomplete definite descriptions, such as ‘The table is covered with books’, are literally false, but may be used to communicate true singular propositions. This usage is standardized to the point that speakers and hearers do not consciously realize that the literal semantic contents of the uttered sentences are false.⁴⁸

The above account is consistent with variation in intuitions about the acceptability of QI sentences, because the practice of using QI sentences to communicate descriptive propositions is not strongly standardized (it is not as strongly standardized as, e.g., the referential use of incomplete definite descriptions). Some speakers encounter QI sentences more often than others, and some speakers are more sensitive to literal content than others. Those who have encountered fewer QI uses, or who are more sensitive to literal content, may judge (39) to be odd. They may realize that a speaker is unlikely to demonstrate a particular publication while uttering (39), and also realize that in the absence of a demonstrated publication, (39) cannot be true. They may feel

⁴⁸For discussion of standardization, see Bach and Harnish 1979 and Bach 1995, 1998. For a few quantificational accounts of referential uses along roughly the above lines, see Neale 1990, Bach 2004, forthcoming, and Soames 2005b. If the practice of uttering QI sentences to convey descriptive propositions is very strongly standardized, then (39) may be genuinely ambiguous, and may have a reading on which it semantically expresses the descriptive content of (45). In that case, complex demonstratives have a fourth descriptive type of use, in addition to the other three types of use mentioned earlier. But I doubt this, for the reasons given in the next paragraph in the main text.

an urge to substitute ‘the’ for ‘that’. Those who have encountered more uses of QI sentences to communicate descriptive propositions, or who are less sensitive to literal content than the preceding speakers, may find (39) fine. They may automatically bypass consideration of its literal truth value, and straightaway entertain the descriptive propositions that are likely to be conveyed by an utterance of (39).

Thus a direct reference theory can explain how (39) could be used to assert or convey descriptive propositions, such as those expressed by (45) and (46), even though the theory assigns truth conditions to (39) that speakers know to be highly unlikely. It can also explain why some speakers find (39) odd, while others do not.⁴⁹

⁴⁹Wolter (2006, 2007) says that many QI sentences containing *plural* complex demonstratives seem fine to nearly all speakers. One of her examples is (a).

- (a) The children read a book of poems. Every girl memorized those poems that she liked best.

Though I find (a) less odd than (39), I still find it a bit odd and still have an urge to substitute ‘the’ for ‘those’. In any case, it is compatible with my view that the use of plural complex demonstratives to convey descriptive propositions is more strongly standardized than the analogous use of singular complex demonstratives. QI uses of plural complex demonstratives may seem more acceptable because plural complex demonstratives refer to pluralities (e.g., groups), and those who hear them may overlook how the relevant plurality varies from individual to individual. For instance, those who read (a) may not notice that the group of memorized poems may vary from girl to girl. It may be easy to (erroneously) think that the plural complex demonstrative refers to a single group of poems, perhaps the union of each group of poems memorized by some girl. This thought may be encouraged by the (seeming) fact that we could truly say ‘The girls memorized *those* poems’, while referring to that union of groups. This explanation is consistent with the fact that there are sentences with QI plural complex demonstratives that sound almost as odd as (39). Consider (b).

(b) The children were given cookies. Every girl ate those cookies she got.
The second sentence in (b) seems odder than the second sentence in (a), and almost as odd as (39): I have a strong urge to substitute ‘the’ for ‘that’ in the second sentence of (b). Perhaps this is so because it is obvious that each child ate different cookies.

9.4. More on the Pragmatics of QI Uses

There is a remaining question about the pragmatics of QI uses. Uttering (39) in order to communicate the descriptive propositions expressed by (45) and (46) seems inefficient. Why would a speaker choose to do so? One reason, which I described above, is that this usage may be standardized to the point that many speakers do not think (much) about the literal semantic content of (39). But another reason is that using a complex demonstrative rather than a definite description is more *emphatic*.

Suppose we observe that Matti is sitting on a chair that is about to collapse. To describe the situation, we could utter either (47) or (48).

(47) The chair that Matti is sitting on is about to collapse

(48) That chair that Matti is sitting on is about to collapse

To my ear, (48) seems more emphatic or urgent. My theory explains this nicely. To grasp the semantic content of (48), one must grasp a singular proposition concerning the chair on which Matti is sitting, which requires one to focus on it in a way that is not required in order to understand (47). Similar points hold for a university professor who utters ‘I cherish that first publication of mine’ rather than ‘I cherish my first publication’. Thus complex demonstratives with uniquely identifying common noun phrases are *emphatic pragmatic alternatives* to their corresponding definite descriptions. A speaker who chooses to utter the complex demonstrative rather than the corresponding definite description does so because she wants her hearers to focus on the relevant object in a way appropriate for having singular thoughts, and that is a way of being more emphatic than someone who uses the corresponding definite description.

Now consider a speaker who utters (39). (39) does not semantically express a true

proposition in her context, and she is not having singular thoughts about each university professor's first publication, and she cannot hope to get her hearers to have singular thoughts about each of them. But there is a general practice of using a complex demonstrative, rather than a corresponding definite description, to be more emphatic, and the speaker can rely on that general practice here. She can exploit the marked character of the complex demonstrative in order to sound more emphatic, even though what she communicates is a descriptive proposition.⁵⁰

9.5. *Semantic Contents of QI Uses*

I have described the extensions of the complex demonstrative (43) ('that first publication of hers') in contexts under assignments, and the truth conditions of sentence (39) in contexts. I turn now to the *semantic contents* of (43) and (39). The semantic content of (43) in a context cannot be an individual. In fact, on the Singular Content Theory, (43) has no semantic content in any context. Nevertheless, sentence (39) has a semantic content in every context, and (43) makes a systematic contribution to (39)'s semantic content in every context. I sketch how this occurs

⁵⁰King discusses the view that complex demonstratives (in NDNS uses) are "stylistic variants" of definite descriptions, by which he means the view that on such uses complex demonstratives function *semantically* as their corresponding definite descriptions do (note 34, p. 186). Against this, King points to a number of cases in which substituting 'the' for 'that' in a complex demonstrative results in infelicity of some sort (pp. 68-72). In most of these examples the common noun phrase is not (relatively) uniquely identifying. The pragmatic theory I have presented here is not a semantic theory of the type that King criticizes. It predicts that substitution of 'the' for 'that' should be felicitous in cases where the relevant common noun phrase is (relatively) uniquely identifying, but it does not predict felicity for other substitutions (nor does it predict infelicity). One reason why substitution of 'the' for 'that' may result in infelicity in cases in which the common noun phrase is not (relatively) uniquely identifying is that definite descriptions have uniqueness entailments of a sort that the corresponding complex demonstratives do not.

below, leaving details to the Appendix.

On the first view presented in the Appendix, the semantic contents of predicates are not attributes (as I said earlier), but rather *propositional functions*, that is, functions from individuals to propositions. Thus the semantic content of ‘dog’ in any context is the propositional function $\lambda_p x Dx$, whose value for any individual object o is the singular proposition $\langle o, \text{being a dog} \rangle$. The semantic content of ‘that’ in a context c is THAT_c , which is a function on propositional functions P that yields o if o is the demonstratum of c and $P(o)$ is a true proposition in the world of c , and that yields nothing if there is no demonstratum of c or $P(o)$ is a false proposition. On this re-engineering of the Singular Content Theory, the semantic content of (49) in context c can be represented with (50).

(49) That dog is smart.

(50) $\langle \text{THAT}_c(\lambda_p x Dx), \lambda_p x Sx \rangle$

(It is important to notice that neither c nor THAT_c nor $\lambda_p x Dx$ is a constituent of (50): only the object obtained by applying THAT_c to $\lambda_p x Dx$ (if any) is.) The semantic content of (39) in context c can be represented by (39P).

(39P) $\langle \langle \text{UNIV}, \lambda_p x Ux \rangle, \lambda_p x \langle \text{THAT}_c(\lambda_p y \text{First-Pub}_y x), \lambda_p y Cxy \rangle \rangle$

Here UNIV is a function from propositional functions to properties of propositional functions. Its value for any propositional function F is a property that a propositional function G has iff: for all individuals x , if $F(x)$ is a true proposition, then $G(x)$ is a true proposition. The last item in (39P) is a propositional function whose value for any individual x is one of the following propositions. (a) The proposition $\langle c_D, \lambda_p y Cxy \rangle$, if c has a demonstratum (namely c_D) and it is a first publication of x in the world of c . (b) The gappy proposition $\langle ______, \lambda_p y Cxy \rangle$, if c has no

demonstratum or the demonstratum of c is not a first publication of x in the world of c . The second component of both of these propositions, namely $\lambda_y Cxy$, is a propositional function whose value for any individual y is the proposition that x cherishes y .

On the property-theoretic version of this theory, which is also presented in the Appendix, the propositional functions in (39P) are replaced by properties that are determined by those propositional functions. On this version, the semantic content of (39) in context c is (39p).

(39p) <<UNIV, being a university professor>, being a thing such that it cherishes
THAT_c(being a first publication of it)>

The second component of this proposition is a property. ((39p) does not have THAT_c as a constituent.) I present more details in the Appendix.

Hence, the Singular Content Theory assigns a (literal) semantic content to (39) in every context.⁵¹

9.6. *Semantic Contents and Free Occurrences of Variables*

I said above that the complex demonstrative (43) ('that first publication of hers') has no semantic content in any context. But when I described the Singular Content Theory earlier, I said

⁵¹King presents an additional objection to direct reference theories that I can now deal with quickly. The objection uses Bach-Peters(-like) sentences such as 'That friend of yours who studied for it passed some math exam she was dreading' (pp. 12-14). The alleged problem for direct reference theories is (roughly) that the complex demonstrative that occurs in this sentence contains an occurrence of a variable and so cannot have an individual as its semantic content. But as we have seen, direct reference theories are consistent with quantification into complex demonstratives and with complex demonstratives' behaving syntactically like quantifier phrases. So given a plausible theory of Bach-Peters sentences that contain only standard quantifiers, it should be possible to formulate a direct reference theory of the semantics and pragmatics of Bach-Peters sentences that contain complex demonstratives. Unfortunately, there is no widely accepted theory of Bach-Peters sentences containing only standard quantifiers.

that the semantic content of a complex demonstrative, in a context, is an individual. Isn't this inconsistent? Yes it is, but I was deliberately speaking loosely earlier. I was ignoring two sorts of case in which a complex demonstrative "that *N*" fails to have a content in a context. I was, first, ignoring contexts in which there is no demonstratum, and contexts in which there is one, but it fails to satisfy the common noun phrase *N*. "That *N*" has no semantic content in such contexts. Second, I was ignoring complex demonstratives that contain free occurrences of variables, such as (43). I could have stated the view more precisely as follows. *If a complex demonstrative has a semantic content with respect to a context *c* and assignment *A*, then its semantic content with respect to *c* and *A* is an individual. If a complex demonstrative has the same semantic content with respect to a context *c* and all assignments, then its semantic content (simpliciter) in *c* is that individual. So if a complex demonstrative has a semantic content (simpliciter) in a context *c*, then its semantic content in *c* is an individual.*

It may seem odd to claim that (43) has no semantic content in context *c*, and yet claim that (43) systematically contributes to the semantic content in *c* of sentences in which it appears. But ideas like this are familiar from other areas of semantics. Consider again the quantifier phrase (42) ('some publication of *x*'). We cannot sensibly speak of *the* extension of (42) (in a context and world), for it contains a free occurrence of a variable, and so its extension varies from assignment to assignment. Yet (42) makes a systematic contribution to the extensions (truth values) of sentences in which it appears (and the variable is bound).⁵² One might similarly

⁵²On some views, like King's (note 7, p. 179), (42) does not have an extension *even relative to an assignment*, yet it can help determine the extensions of sentences in which it appears. Salmon (2006) presents a theory on which open expressions have *bondage extensions* with respect to *n*-tuples of variables and assignments, but his theory does not allow us to speak of *the* extension (simpliciter) of an open expression like (42).

hold that (42) has a semantic content with respect to a context *and an assignment*, but deny that there is such a thing as *the* semantic content of (42) in a context. Nevertheless, (42) can make a systematic contribution to the semantic contents of sentences in which it appears. The theory I outline in the Appendix says the same thing about (43) and other complex demonstratives that contain free occurrences of variables.

Some semanticists might prefer theories that assign semantic contents to all grammatical expressions, including those that contain free occurrences of variables. Such a semanticist might formulate a theory on which (42) has a semantic content. (The semantic content of (42) on such a theory would not be a property of properties. Its semantic content would presumably be something like one of Crimmins's (1992) abstracted relations or one of King's (2001) propositional frames.) Such a semanticist might, in the same spirit, go so far as to formulate a semantic theory on which 'x loves y' differs in semantic content from 'y loves x'. A theory of complex demonstratives similar to the Singular Content Theory could be given within such a framework. On some views of this sort, the semantic content, in a context, of an open complex demonstrative, such as (43) ('that first publication of x'), would have the function THAT_c as a constituent, as would any sentence containing an open complex demonstrative, such as (39).

One might wonder whether the Singular Content Theory should count as a direct reference theory, given that it says that it says that a complex demonstrative containing a free occurrence of a variable, such as (43), has no semantic content in any context. It should. Here is a definition of 'directly referential' that is consistent with the way that this term is used by Kaplan (1989a) and many others. An expression E is *directly referential* iff: for all contexts c and all assignments A , if E has a semantic content in c under A , then the semantic content of E in

c under A is an individual.⁵³ Given this definition, and the Singular Content Theory, all complex demonstratives (including those containing free occurrences of variables) are directly referential, as are simple indexicals (such as ‘I’), proper names, and variables that range over individuals.

10. Conclusion

This completes my elaboration of my earlier theory of complex demonstratives, and my replies to recent objections to direct reference theories. My replies fall quite naturally out of my theory, and out of other direct reference theories, when taken in conjunction with some plausible assumptions about pragmatics. I conclude that the objections do not give us good reasons to reject the Singular Content Theory and other direct reference theories.⁵⁴ I believe that the Singular Content Theory also avoids problems that afflict rival theories. My objections to those rival views appear in other papers (Braun 1994, forthcoming), and constitute part of my overall case in favor of the Singular Content Theory.⁵⁵

⁵³Empty names, empty general terms (e.g., ‘witch’), and “contradictory” complex demonstratives (e.g., ‘that thing which is both a spy and not a spy’) are vacuously directly referential on this definition, because for all contexts and assignments, they have no semantic content. If we wish to avoid this result, we can add the following conjunct to the definition: “and there is a context c and assignment A such that E has a semantic content in c under A ”.

⁵⁴I have not discussed all published objections to direct reference theory. Salmon (2006) and Neale (2007) critically evaluate some objections from King (2001) that I have not discussed.

⁵⁵Thanks to Matti Eklund for inviting me to participate in a workshop on complex demonstratives at Cornell University on April 28, 2007. His invitation motivated me to write this paper. Zachary Abrahams was my commentator at this workshop; thanks to him for his insightful comments. Thanks to Jeffrey King and the audience at Cornell for questions and discussion. Thanks to Nathan Salmon for much helpful correspondence. Thanks to Gail Mauner for many discussions and intuitions. Thanks to Kent Bach for many useful suggestions. Special thanks to Lynsey Wolter for her comments at Cornell, and many subsequent discussions.

Appendix

This Appendix outlines a formal version of the Singular Content theory, culminating in a description of the semantic contents of sentences in which occurrences of quantifier phrases bind occurrences of variables inside occurrences of complex demonstratives, as in King's 'Every university professor cherishes that first publication of hers'. A thorough treatment of this topic would require a full-dress treatment of the semantic contents and truth conditions (relative to suitable parameters) of sentences containing quantifiers. Here I merely sketch treatments of some illustrative examples, and I omit truth conditions altogether. My first sketch uses *propositional functions*, functions whose values are propositions. I borrow this framework from Salmon (1986), with some modifications. (Salmon 2002 and 2006 also influenced my formulation.) This framework originates in Russell's (largely implicit) intensional logic, Church's lambda calculus, Church's logic of sense and denotation, and Montague's intensional logic. After presenting a semantics that relies on propositional functions, I present a property-theoretic alternative.

A.1. Semantics of 'That' on the Propositional Function Alternative

The semantic content of 'that' with respect to any context c is a partial function THAT_c from propositional functions F to individual objects o such that: $\text{THAT}_c(F)=o$, if o is the demonstratum of c and $F(o)$ is a proposition that is true in c_w (the world of c); otherwise, $\text{THAT}_c(F)$ has no value. (Strictly speaking, THAT_c is a *relation* that each propositional function can bear to at most one object in any world. The propositional function F bears THAT_c to o in c_w

iff the above conditions hold.) For instance, let $\lambda_p x D x$ be a propositional function which for any object o yields the proposition $\langle o, \text{being a dog} \rangle$. (I subscript ‘ λ ’ with ‘ p ’ so as to be clear that ‘ $\lambda_p x D x$ ’ refers to a propositional function, rather than to a function from individuals to truth values.) Then $\text{THAT}_c(\lambda_p x D x) = o$ iff o is the demonstratum of c and $\lambda_p x D x(o)$ is a proposition that is true in c_w , that is, $\langle o, \text{being a dog} \rangle$ is true in c_w . (If these conditions hold, then $\lambda_p x D x(o) = \langle o, \text{being a dog} \rangle = \langle c_D, \text{being a dog} \rangle$.) If c has no demonstratum, or $\lambda_p x D x(o)$ fails to be a proposition that is true in c_w , then $\text{THAT}_c(\lambda_p x D x)$ has no value.

The linguistic meaning of ‘that’ is a function T from contexts to semantic contents such that: for all contexts c , $T(c) = \text{THAT}_c$. (Strictly speaking, T is a relation between contexts and semantic contents.)

The extension of ‘that’ varies from one context-world pair to another. The extension of ‘that’ with respect to a context c and a world w is a partial function E_{cw} from propositional functions to objects. For any propositional function F and individual o , $E_{cw}(F) = o$ iff: o is the demonstratum of c and $F(o)$ is a proposition that is true in c_w (note that the truth value of $F(o)$ at w is irrelevant); otherwise, $E_{cw}(F)$ has no value. For instance, let $\lambda_p x S x$ be a function which for any object o yields the proposition $\langle o, \text{being a spy} \rangle$. Then $E_{cw}(\lambda_p x S x) = o$ iff o is the demonstratum of c and $\lambda_p x S x(o)$ is a proposition that is true in c_w ; otherwise, E_{cw} has no value. So applying the extension of ‘that’ at c and w to the semantic content of ‘spy’ at c yields the extension of ‘that spy’ at c and w , if there is one. This extension is identical with the semantic content (if any) of ‘that spy’ in c . (One might initially think that the extension of ‘that’ at c and w should be a function that operates on the *extension* of ‘spy’ at c and w to yield the extension of ‘that spy’ at c and w . But this would be incorrect, as Salmon 2002 points out. The extension of

‘that spy’ at a context c and world w is the demonstratum of c , if that demonstratum is in the extension of ‘spy’ at the world c_w of context c . It does not matter whether d is a spy in world w . So the extension of ‘that’ at c and w should not operate on the extension of ‘spy’ at c and w , but rather the semantic content of ‘spy’ at c , or the extension of ‘spy’ at c and c_w .)

A.2. The Propositional Function Alternative

I begin with some simple quantified sentences of English and some logical representations of them. I use (51L) as my quasi-logical representation of (51).

(51) Every dog barks.

(51L) $[\forall x : x \text{ is a dog}] x \text{ barks.}$

I describe below the semantic content of (51L), and thus indirectly describe the semantic content of (51). Similarly for subsequent English sentences. I assume that the proposition semantically expressed by (51L) is structured in much the same way as (51L). I represent this proposition with (51P).⁵⁶

(51P) $\langle \langle \text{UNIV}, \lambda_p x D x \rangle, \lambda_p x B x \rangle$

The first component of this proposition is represented in (51P) by an ordered pair consisting of UNIV and $\lambda_p x D x$. UNIV is the function that for any propositional function F as argument delivers a property that is true of a propositional function G iff: for all individuals z , if $F(z)$ is a true proposition, then $G(z)$ is a true proposition. $\lambda_p x D x$ is the propositional function whose value

⁵⁶I use the individual variables ‘ x ’, ‘ y ’, ‘ z ’, etc. in both my object language (the language of my logical representations) and my meta-language (the technical version of English that includes the term ‘ $\langle \langle \text{UNIV}, \lambda_p x D x \rangle, \lambda_p x B x \rangle$ ’). I hope that this makes the theory easier to understand, but if it is confusing, the individual variables ‘ x ’, ‘ y ’, and ‘ z ’ in the metalanguage could be replaced with other individual variables, such as ‘ i ’, ‘ j ’, and ‘ k ’.

for any individual argument o is the singular proposition $\langle o, \text{being a dog} \rangle$. Analogous remarks go for (52), (52L), and (52P).

(52) Some cat meows.

(52L) $[\exists x : x \text{ is a cat}] x \text{ meows.}$

(52P) $\langle \langle \text{EXIST}, \lambda_p x Cx \rangle, \lambda_p x Mx \rangle$

I now consider a more complicated case involving multiple quantifiers and polyadic predicates. (53L) is a logical representation of one reading of the English sentence (53), and (53P) represents the semantic content of (53L).

(53) Every dog loves some cat.

(53L) $[\forall x : x \text{ is a dog}][\exists y : y \text{ is a cat}] x \text{ loves } y.$

(53P) $\langle \langle \text{UNIV}, \lambda_p x Dx \rangle, \lambda_p x C-Lx \rangle$

The first component of the proposition represented by (53P) is the same as that of (51P). The second component, $\lambda_p x C-Lx$, is a propositional function whose value, given an individual, is a proposition that has two propositional functions as constituents. This function can be more perspicuously represented with an alternative notation that I use in (53P') below.

(53P') $\langle \langle \text{UNIV}, \lambda_p x Dx \rangle, \lambda_p x \langle \langle \text{EXIST}, \lambda_p y Cy \rangle, \lambda_p y Lxy \rangle \rangle$

(53P) is the same proposition as (53P'): I am merely employing different notations to refer to the same entity. I shall use this notation further below. The second component of (53P') is the propositional function whose value for any individual x is the proposition P with the following two components. (a) The first component of P consists of EXIST and the propositional function that for all individuals y yields the proposition that y is a cat. (b) The second component of P is the propositional function that for all individuals y yields the proposition that x loves y .

The notation I use to describe the second component of (53P') may be misleading. The second immediate constituent of (53P'), namely $\lambda_p x \langle \langle \text{EXIST}, \lambda_p y C y \rangle, \lambda_p y L x y \rangle$, is a propositional function, which does not itself have any constituents. For instance, the function EXIST and propositional function $\lambda_p y C y$ are not constituents of this function, and so are not constituents of proposition (53P'). (The expression ' $\lambda_p y L x y$ ' does not denote anything, not even a propositional function, except relative to an assignment of an object to the variable 'x'.) On the view outlined here, the semantic contents of the constituents of a sentence (such as 'cat' and 'love') may fail to appear as constituents of the sentence's semantic content. In that sense, the semantic content of (53) is not content-compositional.

Consider now an English sentence in which we have quantification into a quantifier phrase.

(54) Every dog loves some cat that bit it.

I give first a logical representation of one of its readings, then a representation of its semantic content on that reading.

(54L) $[\forall x : x \text{ is a dog}][\exists y : y \text{ is a cat and } y \text{ bit } x] x \text{ loves } y.$

(54P) $\langle \langle \text{UNIV}, \lambda_p x D x \rangle, \lambda_p x \langle \langle \text{EXIST}, \lambda_p y C B x y \rangle, \lambda_p y L x y \rangle \rangle$

The first component of proposition (54P) is the same as that of (53P). The second component is a function from individuals to propositions P such that: for any x, the first component of P is the pair of EXIST and the propositional function $\lambda_p y C B x y$ from individuals to propositions whose value for any individual y is the (conjunctive) proposition that y is a cat and y bit x. The second component of P is the propositional function whose value for any individual y is the proposition that x loves y.

Propositions (51P)-(54P) have only two immediate constituents apiece, and only three immediate and non-immediate constituents apiece. For instance, the two immediate constituents of (54P) are $\langle \text{UNIV}, \lambda_p x D x \rangle$, which has two constituents, and $\lambda_p x \langle \langle \text{EXIST}, \lambda_p y C B x y \rangle, \lambda_p y L x y \rangle$, which has no constituents, for a total of three constituents for (54P).

A semantic theory that says that the semantic content of (54) in c is proposition (54P) need not assign a semantic content (simpliciter) in c to $[\exists y : y \text{ is a cat and } y \text{ bit } x]$, though it would need to assign a semantic content to $[\exists y : y \text{ is a cat and } y \text{ bit } x]$ in c with respect to an assignment, so as to define (or describe) the propositional function $\lambda_p x \langle \langle \text{EXIST}, \lambda_p y C B x y \rangle, \lambda_p y L x y \rangle$ and so as to describe the contribution that $[\exists y : y \text{ is a cat and } y \text{ bit } x]$ makes to (54) and other sentences in which it appears. Such a theory could say that the semantic content (simpliciter) of expression E in c is X iff X is the semantic content of E in c with respect to all assignments. Since $[\exists y : y \text{ is a cat and } y \text{ bit } x]$ varies in its semantic content from assignment to assignment in a single context, it would have no semantic content (simpliciter) in any context.

I next turn to simple sentences containing complex demonstratives, such as (55).

(55) That dog barks.

I assume a logical representation of (55) on which ‘that dog’ has a syntactic form similar to quantifier phrases such as ‘some dog’ and ‘every dog’.

(55L) [That $x : x$ is a dog] x barks

The semantic content of (55L) in context c is (55P).

(55P) $\langle \text{THAT}_c(\lambda_p x D x), \lambda_p x B x \rangle$

Note that THAT_c and $\lambda_p x D x$ are not constituents of this proposition. Rather, the *value* (if any) of THAT_c , when applied to $\lambda_p x D x$, is a constituent of proposition (55P). In that sense, the semantic

content of (55) is not content-compositional. If c has a demonstratum c_D , and c_D is a dog in c_w , then $\text{THAT}_c(\lambda_p x D x) = c_D$, and the semantic content of (55L) in context c is (55Pf) ('f' for 'full').

$$(55Pf) \langle c_D, \lambda_p x B x \rangle$$

However, if c_D is not a dog in c_w , or c has no demonstratum, then $\text{THAT}_c(\lambda_p x D x)$ has no value, and the semantic content of (55) in c is the gappy proposition (55Pg) ('g' for 'gappy').

$$(55Pg) \langle ______, \lambda_p x B x \rangle$$

Finally, we can turn to a sentence in which there is quantification into a complex demonstrative.

(56) Every university professor cherishes that first publication of hers.

(56L) $[\forall x : x \text{ is a university professor}][\text{that } y : y \text{ is a first publication of } x] x \text{ cherishes } y.$

The semantic content of (56L) in context c can be represented with (56P).

$$(56P) \langle \langle \text{UNIV}, \lambda_p x U x \rangle, \lambda_p x \langle \text{THAT}_c(\lambda_p y \text{First-Pub } y x), \lambda_p y C x y \rangle \rangle$$

The first component of the proposition represented by (56P) is represented by an ordered pair consisting of UNIV and the propositional function whose value for any individual x is the proposition that x is a university professor. The second component of (56P) is also a propositional function. Its value for any individual x is the proposition P with the following two components. (a) The first component of P is $\text{THAT}_c(\lambda_p y \text{First-Pub } y x)$. $\text{THAT}_c(\lambda_p y \text{First-Pub } y x)$ is the individual c_D (the demonstratum of c) if c has a demonstratum and c_D is a first publication of x in c_w ; otherwise, $\text{THAT}_c(\lambda_p y \text{First-Pub } y x)$ is nothing. (b) The second component of proposition P is the propositional function $\lambda_p y C x y$ from any individual y to the proposition that x cherishes y . Overall, then, the second component of (56P) is the propositional function whose value for any individual x is the proposition $\langle c_D, \lambda_p y C x y \rangle$ if c_D is the demonstratum of c and c_D is a first

(simpliciter) to it in *c*.

A.3. The Property-Theoretic Alternative

The propositional functions that appear in (51)-(55) determine certain corresponding properties (see Salmon 1986, 2006). For example, the propositional function $\lambda_p x Dx$ determines the following property: being a *y* such that $\lambda_p x Dx(y)$ is a true proposition. If *y* is a dog, then $\lambda_p x Dx(y)$ is a true proposition, and if *y* is not a dog, then $\lambda_p x Dx(y)$ is a false proposition. So the property mentioned above is one that *y* has iff it is a dog. So the propositional function $\lambda_p x Dx$ determines the property of being a dog. Similarly, the other propositional functions mentioned in (51)-(55) determine corresponding properties. Hence on a property-theoretic alternative to the theory given in subsection A.2, these propositional functions can be replaced with their corresponding properties to obtain the following alternative propositions.

(51p) <<UNIV, being a dog>, barking>

(52p) <<EXIST, being a cat>, meowing>

(53p) <<UNIV, being a dog>, loving some cat>

(54p) <<UNIV, being a dog>, loving some cat that bit it>>

Proposition (54p) might be slightly more perspicuously described by (54q).

(54q) <<UNIV, being a dog>, being a thing that loves some cat that bit it>>

To obtain the property theoretic analog of (55P), we first must assume that $THAT_c$ can operate on properties rather than propositional functions. We can then obtain (55p).

(55p) < $THAT_c$ (being a dog), barking>

The property-theoretic analog of (56P) can be described using English-enhanced-with-variables,

as in (56p).

(56p) $\langle \langle \text{UNIV, being a university professor} \rangle, \text{ being a } z \text{ such that } z \text{ cherishes} \\ \text{THAT}_c(\text{being a first publication of } z) \rangle$

(56q) is a specification of this same proposition using slightly more ordinary English.

(56q) $\langle \langle \text{UNIV, being a university professor} \rangle, \text{ being a thing that cherishes} \\ \text{THAT}_c(\text{being a first publication of it}) \rangle$

If there is a demonstratum of c , and it is a first publication of every university professor, then proposition (56p) is true. If one of these conditions fails to hold, then there is at least one university professor o such that the function THAT_c has no value when applied to the property of being a first publication of o , and so o fails to have the property (if there is one) of cherishing $\text{THAT}_c(\text{being a first publication of } o)$. So proposition (56p) is at least untrue, and perhaps false.

One might worry that ‘being a thing that cherishes $\text{THAT}_c(\text{being a first publication of it})$ ’ fails to refer to a property, because there are objects o such that THAT_c has no value when applied to the property of being a first publication of o . I am not sure whether this is a well-founded concern, but if it is, then the property-theoretic analog of (56P) is (56r).

(56r) $\langle \langle \text{UNIV, being a university professor} \rangle, \text{ being an } x \text{ such that } \langle \text{THAT}_c(\text{being a} \\ \text{first publication of } x), \text{ being cherished by } x \rangle \text{ is a true proposition}$

The second component of this proposition is a genuine property, since for every assignment of an object to ‘ x ’, the propositional term ‘ $\langle \text{THAT}_c(\text{being a first publication of } x), \text{ being cherished by } x \rangle$ ’ refers to a (gappy or non-gappy) proposition that is either true or not true.

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