

UNIVERSITY of CALIFORNIA

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**THAT'S THAT:
THE SEMANTICS AND PRAGMATICS OF DEMONSTRATIVE
NOUN PHRASES**

A dissertation submitted in partial satisfaction of the
requirements for the degree of

DOCTOR OF PHILOSOPHY

in

LINGUISTICS

by

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June 2006

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Abstract

That's That:

The Semantics and Pragmatics of Demonstrative Noun Phrases

by

Lynsey Kay Wolter

This dissertation analyzes the compositional semantics of demonstrative descriptions (e.g. *that cat*) and demonstrative pronouns (e.g. *this*) in English. Departing from traditional approaches to the interpretation of demonstrative noun phrases, I argue that demonstrative determiners and pronouns do not have access to special means of achieving reference such as speaker demonstrations or referential intentions. Instead, demonstrative determiners are given a semantics that is parallel to the semantics of the definite article, and demonstrative pronouns are treated on a par with third-person pronouns. My central proposal is that demonstrative noun phrases are interpreted relative to *non-default situations*, while definite descriptions and third person pronouns are interpreted relative to *default situations*. A default situation is a situation relative to which the main predicate of a clause is interpreted and the truth value of the clause is calculated. By requiring interpretation relative to a non-default situation, demonstrative determiners and pronouns in effect indicate that the interpreter must shift the domain in order to identify the referent of the demonstrative noun phrase.

The analysis developed in this dissertation recasts some of the insights of previous work on demonstrative noun phrases, which for the most part has

focused on deictic uses, as characterizing deixis rather than the lexical semantics of definite determiners and pronouns. This leaves room for the analysis to account for additional data, including anaphoric, bridging and emotive uses of demonstratives, as well as surprising attributive and opaque readings of demonstrative descriptions that are licensed by postnominal modifiers.

The analysis also has implications for the semantics of the larger class of definite noun phrases. Because the account depends on a uniqueness condition that is shared by definite noun phrases, it provides further support for uniqueness-based theories of definiteness. Finally, the analysis of demonstrative determiners and pronouns contributes to work on the semantics-pragmatics interface by showing that determiners and pronouns may place conditions on the pragmatic phenomenon of contextual domain restriction.

Acknowledgements

It's a great pleasure to have this opportunity to thank the many people who have helped me during the writing of this dissertation and during my graduate school career. First and foremost, I thank my dissertation advisor, Donka Farkas, for support throughout graduate school. Donka is singlehandedly responsible for teaching me to be a semanticist, and I think it will be obvious to anyone who is familiar with her work that the research in this dissertation is deeply influenced by Donka's semantic worldview. Donka has an amazing talent to give me just what I need, whether that is a word of encouragement, a probing question, or an intriguing example. I couldn't have asked for a better graduate school experience.

I also thank the other two members of my committee, Bill Ladusaw and Jim McCloskey, for many interesting conversations. Bill has the ability to turn my work inside out, give it a tug, and hand it back to me with a beautiful generalization on top. Jim helped me to remember the really important theoretical questions lurking behind the dissertation, and has a talent for identifying interesting data that is relevant to the big questions. Bill and Jim's feedback significantly improved this dissertation.

Michela Ippolito visited UCSC for a year while I was in the early stages of working on demonstratives, and we met several times to discuss my research. She wasted no time in identifying all the weak points in an early analysis, setting the stage for the improved analysis of the dissertation, and also helped to clarify some puzzling sets of data.

I feel extremely fortunate to have had the chance to visit the UMass-

Amherst Linguistics Department a semester, and I thank the faculty, graduate students and staff for a warm welcome there. Angelika Kratzer generously agreed to sponsor my visit, and during our many meetings, not only taught me her research methods by example but helped me to hammer out the analysis of chapter 4. I also thank Barbara Partee for an extraordinarily productive meeting, and Barbara, Vladimir Borshev and Sarah White for a pleasant living arrangement.

I have had the pleasure of conversing with many other linguists and philosophers about demonstratives and related matters, including Irene Heim, Klaus von Heusinger, Chris Barker, Chris Potts, Line Mikkelsen, Maribel Romero, Jeff King, Kent Bach, Jason Stanley, Paula Menéndez-Benito, and Lance Nathan.

For support in graduate school in general, I am grateful to the entire UCSC Linguistics Department. The faculty gave me a solid background not only in semantics but also in phonology, syntax, and teaching methods. The amazing Linguistics Department staff, Tanya Honig, Connie Creel and Ashley Hardisty, protected me from worries about paperwork and other day-to-day details. The graduate students provided linguistic and moral support, especially Christine Gunlogson, James Isaacs, Line Mikkelsen, my officemates Anya Lunden and Anne Sturgeon, and Florence Woo, the world's best housemate.

Finally, I thank Donna Jo Napoli, Ted Fernald and Kari Swingle for introducing me to linguistics, and Dan and Edie Wolter for introducing me to language.

My graduate studies were supported financially in part by a Mellon Fellowship and an NSF Graduate Research Fellowship.

Chapter 1

Introduction

One of the fundamental challenges of nominal semantics is to explain how argumental noun phrases are connected with entities in the real world. The connection between most noun phrases and actual entities is typically assumed to be mediated by a discourse referent, or distinguished variable ranging over individuals, in a model of discourse. These noun phrases are taken to be associated with a discourse referent and to constrain its value. For example, *a cat* in argumental position requires its associated variable to satisfy the predicate *cat*, while *she* requires its associated variable to be female. The variables associated with the noun phrases have real entities as their values, and the noun phrases are thus indirectly connected to entities in the real world.

In contrast with other noun phrases, demonstratives (noun phrases containing *this*, *that*, *these* or *those*) have been analyzed as involving more direct connections to actual entities. They have been argued to refer in virtue of either a speaker demonstration (Kaplan 1977, Reimer 1991) or a speaker intention to refer (Kaplan 1989, Bach 1992). In Kaplan's classic account, the availability of

these special means of reference preempts the ordinary mode of composition, so that the descriptive content of a demonstrative description does not interact with the compositional semantics of the rest of the sentence. Even recent analyses that take definite and demonstrative descriptions to compose in the same way (King 2001, Roberts 2002) assume that demonstratives differ from other noun phrases in having access to speaker demonstrations or referential intentions that form a direct connection between the speaker and the intended referent.

This dissertation takes the radical position that demonstrative noun phrases have access to no special means of reference—that neither speaker demonstrations nor speaker intentions are directly involved in the interpretation of demonstratives. Instead, the analysis developed here relies exclusively on semantic tools that are available to the semantics of other noun phrases: the interpretation of the descriptive content, contextual domain restriction, and modal anchoring. This results in a more unified typology of definite noun phrases, in which demonstrative and definite descriptions are treated on a par, as are demonstrative and third-person pronouns. Chapter 2 is devoted to exploring and defending this semantic typology. The primary evidence in chapter 2 has to do with the scopal possibilities of definite and demonstrative descriptions. I argue that these noun phrases have the same scopal possibilities, supporting the view that they form a semantic natural class. I further argue that the scopal possibilities of definite and demonstrative descriptions are most naturally explained on the view that definite and demonstrative determiners denote functions of type $\langle et, e \rangle$ and that the interpretation of their NP complements

interacts with the compositional semantics of the rest of the sentence.

The central challenge for the analysis, of course, is to explain how demonstrative noun phrases differ from other noun phrases, while maintaining the view that demonstrative and definite descriptions form a natural class and that demonstrative noun phrases do not depend crucially on either speaker demonstrations or referential intentions. Certainly many facts about the distribution of definite and demonstrative descriptions suggest at first glance that demonstrative descriptions have access to special factors that definite descriptions do not. For example, deictic uses of demonstrative descriptions are sensitive to extralinguistic gestures, as shown in (1–2) below. When there is more than one potential referent in the context of utterance, a deictic demonstrative description is acceptable with an appropriate gesture towards one potential referent, and a definite description is unacceptable even with an appropriate gesture. A deictic use of a definite description is acceptable just in case there is a unique potential referent in the context of utterance, as shown in (3).

- (1) [in an art gallery; speaker points at a painting]
This/That painting is beautiful.
- (2) [in an art gallery; speaker points at a painting]
The painting is beautiful.
- (3) [in a room containing exactly one painting]
The painting is beautiful.

Anaphoric uses of demonstrative descriptions appear to be more sensitive to recency of mention than definite descriptions. In a context in which two potential linguistic antecedents are introduced in quick succession, a demonstrative description refers unambiguously to the most recently mentioned antecedent, while a definite description is unacceptable:

- (4) A woman_i entered from stage left. Another woman_j entered from stage right.
- a. This/That woman_j was carrying a basket of flowers.
 - b. # The woman was carrying a basket of flowers. (Roberts 2002)

In addition, demonstrative descriptions have special uses that are not shared by definite descriptions, such as the emotive use illustrated in (5) below.

- (5) That mother of John Smith is quite a woman!

In chapter 3 I develop a unified account of all of these uses, as well as of descriptions licensed by bridging inferences and of definite descriptions with singleton-set-denoting content. I argue that definite and demonstrative descriptions are both subject to a uniqueness condition, and that the distributional differences I have touched on here reflect a difference not in modes of reference but in what domain the uniqueness condition is satisfied relative to. More specifically, I claim that nominal predicates are ordinarily interpreted relative to what I call *default situations*—situations relative to which main predicates are interpreted and truth values are computed. Demonstrative determiners require that their nominal complements be interpreted relative to *non-default situations*. Because I also use the modal anchor of a nominal predicate to implement contextual domain restriction, the analysis of demonstrative determiners in effect takes demonstratives to indicate that a domain shift is necessary in order for reference to succeed. For example, on my view, (2–3) above reflect the fact that deictic uses of definite descriptions require uniqueness relative to the context of utterance, while (1) is licensed because the uniqueness condition on demonstrative descriptions is satisfied relative to the situation corresponding to the speaker’s gesture. One consequence of this view is that some previous claims

about demonstratives can now be understood as characterizing deictic uses of definite noun phrases rather than the semantics of demonstratives per se.

The analysis of demonstrative determiners proposed in chapter 3 depends crucially on a uniqueness condition. This provides further support for uniqueness-based treatments of definiteness, which to date have been based mainly on work on definite descriptions. The analysis also has implications for the semantics-pragmatics interface. By arguing that demonstrative determiners constrain the modal anchoring of their nominal complements, and that contextual domain restriction is implemented through the modal anchoring of nominal predicates, I commit myself to a view in which the lexical semantics of determiners constrains how domain restriction, an uncontroversially pragmatic phenomenon, takes place. In other words, the analysis suggests that semantics and pragmatics cannot be separated into independent components.

Chapters 4 and 5 are concerned with extensions of the analysis of determiners. Chapter 4 addresses a special construction consisting of a demonstrative description with a postnominal modifier, which I call the *postmodified demonstrative* construction, and which has been largely ignored in the literature. I show that the construction is structurally licensed by a postnominal modifier and has interpretations not normally available to demonstratives.

Postmodified demonstratives have surprising attributive and opaque interpretations. For example, (6) but not (7) below can be paraphrased by the free relative in (8), showing that the postmodified demonstrative in (6), unlike ordinary demonstrative descriptions, has an attributive reading.

- (6) Those employees responsible were fired.
- (7) Those responsible employees were fired.

(8) Whichever employees were responsible were fired.

Likewise, (9) below, unlike (10), has a coherent interpretation, showing that postmodified demonstratives, unlike ordinary demonstrative descriptions, can take narrow scope under intensional operators.

(9) Those employees responsible could have been different people.

(10) Those responsible employees could have been different people.

I argue that ordinary demonstrative descriptions resist attributive and opaque interpretations because, out of the blue, these interpretations involve the relativization of the descriptive content to a default situation. Postnominal modifiers, however, are modally independent, and I argue that they support the introduction of new situation variables that simultaneously satisfy the requirements of the demonstrative determiner and the conditions required for an attributive or opaque reading. In short, although the special construction looks quite exceptional at first glance, its behavior is correctly predicted by the analysis of demonstrative determiners.

Chapter 5 investigates the hypothesis that demonstrative pronouns are semantically equivalent to demonstrative determiners, while third person pronouns are similar to the definite article in lacking the *non-default* condition. I also hypothesize that differences between pronouns and full descriptive noun phrases arise from the presence versus absence of overt descriptive content, and argue that pronouns are sensitive to salience in a way that noun phrases with descriptive content are not. These hypotheses predict that there will be parallel contrasts between, on the one hand, definite and demonstrative descriptions, and on the other, third-person pronouns and demonstrative pronouns.

One not particularly surprising contrast among pronouns, in light of my initial hypothesis, is that in deictic reference to abstract objects, demonstrative pronouns are sensitive to demonstrations and *it* is not, as shown below:

- (11) [We are viewing an X-ray video of the vocal apparatus. Speaker points at a gesture of the tongue.]
- a. That/This lasted for less than 100 ms.
 - b. # It lasted for less than 100 ms.

Other contrasts are consistent with the hypothesis in less obvious ways. For example, demonstrative pronouns are more acceptable than third person pronouns in referring to inferred composite entities. Thus, *that* in (12) below can refer to the composite of the cup and the saucer, while *it* is more likely to refer to the cup alone.

- (12) Put the cup on the saucer.
- a. Now put that next to the candle.
 - b. Now put it next to the candle. (Brown-Schmidt et al. 2005)

I argue in chapter 5 that inferred composite entities are not salient in the discourse context but are highly salient in the result states evoked by certain verbs, including *put*. The hypothesized pronoun meanings correctly predict *it* to be unacceptable in these contexts, and demonstrative pronouns to be licensed in virtue of interpretation relative to the result state. The distribution of pronouns is unavoidably murky, but the data discussed in chapter 5 indicates that the initial hypothesis about pronoun meanings is indeed on the right track, supporting the view of demonstratives developed in the rest of the dissertation and completing the semantic typology.

Chapter 2

Definite and Demonstrative Descriptions as a Semantic Class: Evidence from Scope

2.1 Overview

This chapter investigates the place of demonstrative descriptions in the semantic typology of noun phrases. Understanding how demonstrative noun phrases relate semantically to other noun phrases is an important first step in analyzing their interpretation: the position one takes on the nature of the noun phrase typology determines one's position on such basic theoretical matters as the semantic type of demonstrative determiners, how demonstrative determiners compose with their descriptive content, and how demonstrative descriptions interact with the compositional semantics of the sentence and with the dis-

course representation.

Previous research on demonstrative descriptions has established three positions on the place of demonstrative descriptions in the semantic typology of noun phrases. Kaplan (1977) argues that demonstrative noun phrases, including demonstrative descriptions, are semantically closest akin to proper names. The consequence of this view is that demonstrative descriptions are expected to denote type $\langle e \rangle$, and the descriptive content is not expected to interact with other elements in the sentence. King (2001) takes a diametrically opposed position, viewing all noun phrases with descriptive content as semantically akin to quantificational noun phrases such as *every cat*. One consequence of this view is that demonstrative descriptions are expected to participate in scope ambiguity. Finally, Roberts (2002) takes a position in the middle ground, arguing that demonstrative descriptions are semantically most closely related to definite descriptions, that both of these kinds of noun phrases are of type $\langle e \rangle$, and that the descriptive content of definite and demonstrative descriptions may interact with the compositional semantics of the rest of the sentence. This chapter presents additional evidence in support of Roberts' position.

I begin by discussing some general considerations about the semantic typology of noun phrases. The main substance of the chapter is concerned with the semantic scope of definite and demonstrative descriptions and what the scopal possibilities of these noun phrases reveal about their semantics. Although the various positions on the interpretation of demonstrative descriptions that I have just described make clearly different predictions about the scopal possibilities of demonstratives, the literature on the scope of definite and demonstrative noun

phrases has not yet reached enough of a consensus to allow an easy comparison of the different positions. I argue that the scope of definite and demonstrative descriptions is constrained in part by the lexical semantics of the determiners and in part by how the descriptions are used. The constraints on scope that I describe in this chapter are most naturally explained by the view that takes definite and demonstrative descriptions to form a semantic natural class.

2.2 Definite and demonstrative descriptions in the semantic typology of noun phrases

Definite and demonstrative descriptions, definite and demonstrative pronouns, and names are traditionally classified as “definite noun phrases.”¹ This class of noun phrases can be characterized by combining two distinctions that cross-classify noun phrases. The first is the strong/weak distinction due to Barwise and Cooper (1981). The second distinction has to do with whether or not a noun phrase licenses discourse anaphora; adopting the theory-neutral terminology of Farkas and de Swart (2003), let’s call noun phrases that license discourse anaphora “discourse transparent” and those that do not “discourse opaque.” Examples of each of these classes of noun phrases are shown below.

- (1) Cross-classifying noun phrases

	strong	weak
discourse transparent	<i>the NP, this/that NP, pronouns, names</i>	<i>a NP, some NP, three NP, ...</i>
discourse opaque	<i>every NP, most NP, neither NP, ...</i>	<i>many NP, few NP, no NP, ...</i>

¹Maclaran (1982) argues that demonstrative degree phrases (e.g. *this tall*) are also definite.

“Weak” and “strong” quantifiers can be distinguished by using three syntactic diagnostics due to Postal (1966). Strong quantifiers are licensed in preposed VPs and as the subjects of individual-level predicates, and weak quantifiers are licensed in the pivot of existentials, as shown below. (See Barwise and Cooper (1981) for a semantic characterization of these two classes of noun phrases.)

- (2) VP preposing
 - a. Big as that boy is, he can't lift it.
 - b. Big as this boy is, he can't lift it.
 - c. Big as the boy is, he can't lift it.
 - d. Big as each boy is, he can't lift it.
 - e. *Big as a boy is, he can't lift it.
 - f. *Big as no boy is, he can't lift it.
- (3) Subject of individual-level predicate
 - a. That house is mine.
 - b. This house is mine.
 - c. The house is mine.
 - d. Each house is mine.
 - e. ? A house is mine.
 - f. ? No house is mine.
- (4) Pivot of existential²
 - a. *There is that unicorn in the garden.
 - b. *There is this unicorn in the garden.
 - c. *There is the unicorn in the garden.
 - d. *There is each unicorn in the garden.
 - e. There is a unicorn in the garden.
 - f. There is no unicorn in the garden.

Noun phrases also differ in their ability to license cross-sentential anaphora. The examples in (5–12) below show that demonstrative, definite and indefinite descriptions license cross-sentential anaphora, while other noun phrases do not.

²Definite noun phrases are licensed in existential sentences with a “list” interpretation (see Rando and Napoli 1978).

- (5) ... That man_{*i*} came in. He_{*i*} coughed.
- (6) ... This man_{*i*} came in. He_{*i*} coughed.
- (7) ... The man_{*i*} came in. He_{*i*} coughed.
- (8) ... A man_{*i*} came in. He_{*i*} coughed.
- (9) ... He_{*i*} came in. He_{*i*} coughed.
- (10) ... John_{*i*} came in. He_{*i*} coughed.
- (11) ... Every man_{*i*} came in. *He_{*i*} coughed.
- (12) ... No man_{*i*} came in. *He_{*i*} coughed.

The contrast between “discourse transparent” and “discourse opaque” noun phrases is admittedly not always quite as clear-cut as the contrast in (5–12) might suggest. One complication is that some quantificational noun phrases license cross-sentential anaphora with a plural anaphor, as shown in (13–14):

- (13) Every student_{*i*} came in. They_{*i*} were coughing.
- (14) Few congressmen admire Kennedy, and they are very junior. (Evans 1980: ex. (7))

The standard account of (13–14), due to Evans (1980), is that quantifiers like *every* and *few* make salient a set, namely the set of entities satisfying the quantifier restriction or perhaps the set of entities satisfying both the restriction and the nuclear scope. A plural pronoun may then refer to the plurality created by summing the elements of the set that has been made salient. The relation between the quantificational noun phrase and the plural pronoun is therefore clearly an indirect one. The relation between the antecedents and the anaphors in (5–12) could in principle be more direct, suggesting that it is still reasonable to identify as truly “discourse transparent” the set of noun phrases that directly license cross-sentential anaphora.

A second complication is that “pseudo-incorporated” or “semantically incorporated” noun phrases in some languages license null pronominal anaphors

but not overt pronouns (Farkas and de Swart 2003). An example from Hungarian is shown below. The indefinite noun phrase in (15) licenses cross-sentential anaphora, as expected. The semantically incorporated bare nominal *beteget* ‘patient’ does not license the overt pronoun in (16), but *does* license the null pronominal in (17).

- (15) a. János_i **egy beteget**_j vizsgaált a rendelőben.
 J._i a patient.acc_j examine.past the office.in
 ‘Janos examined a patient in the office.’
- b. pro_i Túl súlyosnak találta **őt**_j és beultatta pro_j
 pro_i too severe.dat find.past he.acc_j and intern.cause.past pro_j
 a kórházba.
 the hospital.in
 ‘He found him too sick and sent him to the hospital.’
- (16) a. János_i **beteget**_j vizsgaált a rendelőben.
 J._i patient.acc_j examine.past the office.in
 ‘Janos patient-examined in the office.’
- b. ??pro_i Túl súlyosnak találta **őt**_j és beultatta pro_j
 pro_i too severe.dat find.past he.acc_j and intern.cause.past pro_j
 a kórházba.
 the hospital.in
 ‘He found him too sick and sent him to the hospital.’
- (17) a. János_i **beteget**_j vizsgaált a rendelőben.
 J._i patient.acc_j examine.past the office.in
 ‘Janos patient-examined in the office.’
- b. pro_i Túl súlyosnak találta **pro**_j és beultatta pro_j
 pro_i too severe.dat find.past he.acc_j and intern.cause.past pro_j
 a kórházba.
 the hospital.in
 ‘He found him too sick and sent him to the hospital.’ (Farkas and de Swart 2003:18–19)

These complications show that the licensing of cross-sentential anaphora is a complex and still not fully understood phenomenon. Accounting for all of the facts in this area is far beyond the scope of this dissertation. What is important

for present purposes is that definite and indefinite noun phrases form a natural class in uncontroversially and directly licensing cross-sentential anaphora.

Definite noun phrases, then, are noun phrases that are “strong” and “discourse transparent.” In addition, only definite noun phrases can occur comfortably as the complement to partitive *of*, as shown below.³ (See Ladusaw (1982) for discussion of the constraint on partitives, and Abbott (1996) for discussion of counterexamples to the generalization given here.)

- (18) All of those women read the book.
- (19) All of these women read the book.
- (20) All of the women read the book.
- (21) * All of some women read the book.
- (22) * All of most women read the book.

We have seen here that there is clear distributional data that justifies treating definite noun phrases as a natural class. The question that remains open is how to characterize this class semantically. This is a large and difficult question over which a great deal of ink has been spilled, and I do not claim to have a definitive answer in this dissertation. I will argue, however, that some progress towards a semantic characterization of definiteness can be made by carefully comparing different kinds of definite noun phrases. Let’s now take a first pass at the typology of definite noun phrases.

2.2.1 The typology of definite noun phrases

Even though definite noun phrases seem to form a natural class, some researchers have proposed that different kinds of definite noun phrases have fun-

³The class of definite noun phrases is also distinguished by differential object marking in many languages other than English. In these languages, direct objects are marked with case morphology just in case they are definite noun phrases. See Aissen (2003) for an overview.

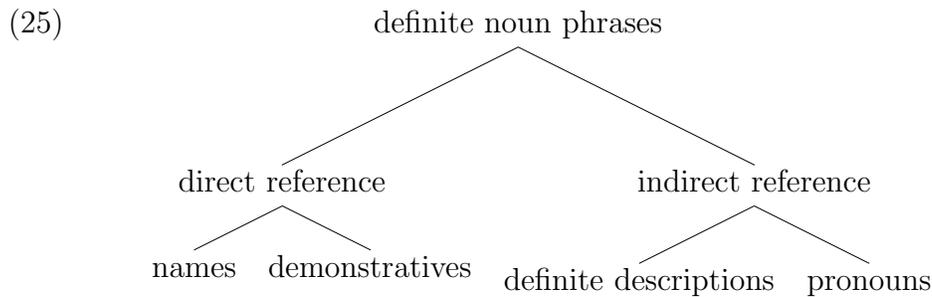
damentally different semantics. For example, while it is now generally accepted that the descriptive content of definite descriptions interacts with the compositional semantics of the whole sentence, Kripke (1982) argues that proper names refer directly, contributing an entity and nothing else to the compositional semantics. Kaplan (1977) makes a similar proposal about demonstrative pronouns and demonstrative descriptions, arguing that the descriptive content of a demonstrative description is interpreted at a special pre-propositional level and does not interact with the rest of the compositional semantics. Kaplan's view is supported by the observation that the scopal possibilities of demonstrative descriptions seem to be more limited than the scopal possibilities of definite descriptions. For example, in (23) below *the person I'm pointing at* can take narrow scope under the modal *would*, so that the referent of the description covaries with the worlds being quantified over. The demonstrative description *that person* in (24), by contrast, refers rigidly and cannot covary with the worlds being quantified over, and as a result, the sentence is judged false.⁴

⁴Some speakers also judge (23) to be false. These speakers appear to be interpreting the definite description as *the person I'm pointing at now*, that is, they take the present tense to be indexical. If the present tense in the description requires the description to refer to something in the actual context, then of course the referent will not vary across worlds. Notice, however, that the scopal inertness of the definite description in (23) is not an intrinsic feature of definite descriptions. All speakers judge (i) below to be true in the relevant context, showing that all speakers allow definite descriptions to take narrow scope in principle. Furthermore, (ii) is unacceptable, an unsurprising fact, given that the subjunctive morphology of the relative clause, requiring covariation with worlds, clashes with the demonstrative determiner's apparent scopal inertness.

- (i) If John and Mary switched places, the person I would be pointing at would be a woman.
- (ii) [pointing at John] #If John and Mary switched places, that person I'd be pointing at would be a woman.

- (23) [pointing at John throughout] If John and Mary switched places, the person I'm pointing at would be a woman.
- (24) [pointing at John throughout] If John and Mary switched places, that person would be a woman. (Kaplan 1977, Roberts 2002)

The direct reference approach to demonstratives explains this contrast. If the demonstrative description contributes only an entity to the composition of the truth conditions of the sentence, there will be no way for the referent of the demonstrative to covary with worlds. On Kaplan's view, the semantics of definite and demonstrative descriptions are thus fundamentally different, requiring different modes of composition at the point where the determiner combines with the descriptive content. The typology of definite noun phrases on the direct reference approach is shown in (25).

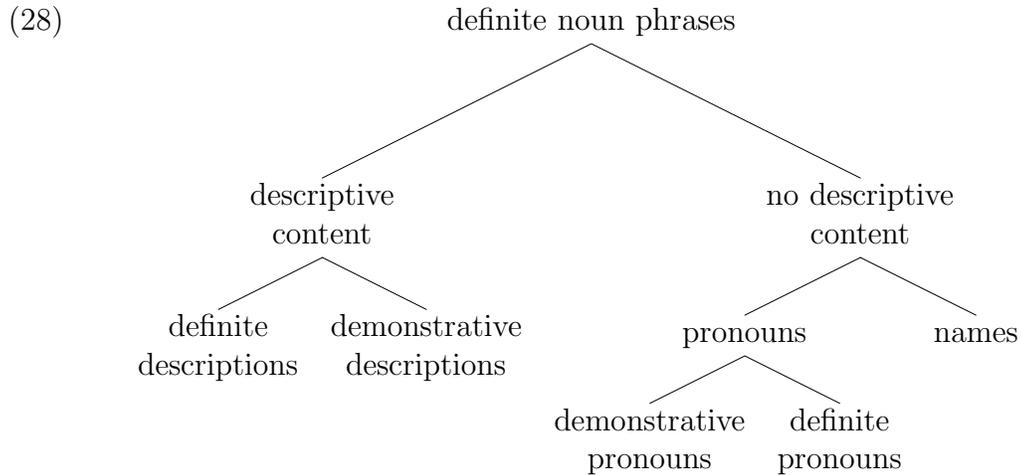


On the other hand, subsequent research has found that some demonstrative noun phrases appear to take narrow scope under various operators, an observation that is problematic for the direct reference approach. For example, the referent of the demonstrative in (26) below covaries with the variable bound by the universal quantifier, and the demonstrative in (27) occurs in a modal subordination context, apparently taking narrow scope under an intensional operator.

- (26) Every dog in the neighborhood, even the meanest, has an owner who thinks that that dog is a sweetie.

- (27) Michelin is hoping to find ten more tyre inspectors. These new employees would be required to work the night shift for the first three weeks. (Roberts 2002: ex. (11–12))

In contrast to (23–24), examples like (26–27) suggest that the descriptive content of a demonstrative description interacts with the compositional semantics, just as the descriptive content of a definite description does. Because of observations like this, recent analyses of demonstrative descriptions (King 2001, Roberts 2002, Wolter 2004) have treated definite and demonstrative descriptions more similarly than the direct reference approach would suggest. The typology of definite noun phrases on the approach that I will be adopting is shown in (28).



The challenge for this approach, of course, is to explain the clear contrast between definite and demonstrative descriptions in (23–24). I argue in section 2.3.2 below that the contrast depends on how strongly a deictic use of the description is preferred, and not on the lexical semantics of demonstrative and definite determiners. Descriptions can be used to refer to elements in the context of utterance given appropriate contextual support, and I show that this results in scopal inertness; this interpretation happens to be more salient

with demonstrative descriptions than with definite descriptions because it can be forced by the use of a physical demonstration.

This dissertation defends the position that demonstrative and definite determiners have parallel semantics, reflected, among other things, in their having the same semantic type. The decision to analyze demonstrative and definite determiners as having the same semantic type is not the only decision to be made, of course: we must also decide *which* semantic type the determiners have. This amounts to a choice between a quantificational and a referential treatment of definite and demonstrative descriptions. Now, we know from the Montague Semantics tradition that all noun phrases can in principle be interpreted as generalized quantifiers, that is, expressions of type $\langle\langle e, t \rangle, t\rangle$. But we also know from Partee (1986) that generalized quantifier interpretations can be derived by regular typeshifting operations from referential (type $\langle e \rangle$) and predicational (type $\langle e, t \rangle$) expressions. So the fact that definite noun phrases *can* be interpreted as generalized quantifiers does not guarantee that they *must* be interpreted that way in all environments. Some researchers (e.g. Neale (1990), King (2001)) argue that the basic type of definite and demonstrative descriptions is $\langle\langle e, t \rangle, t\rangle$ —that is, that everything that needs to be said about the interpretation of definite and demonstrative descriptions follows from a quantificational interpretation. Other researchers (e.g. Kaplan (1977), Löbner (1985), Roberts (2002, 2003)) argue that the behavior of definite and demonstrative descriptions is most naturally explained if the basic type of such noun phrases is $\langle e \rangle$.

If the basic interpretation of definite and demonstrative noun phrases is quantificational, then definite and demonstrative descriptions should have some similarities to uncontroversial quantifiers such as *every NP* and *no NP*; in particular, they should participate in scope ambiguities to the same degree as quantificational noun phrases. King (2001) makes perhaps the most thorough defense in the literature of this position with respect to demonstrative noun phrases.⁵ For example, King observes that the demonstrative noun phrase in (29) below appears to take narrow scope below the universal quantifier, since the pronoun *his* is interpreted as a bound variable. An account of demonstrative descriptions as purely referential would appear to predict that this reading is impossible.

- (29) Every father_{*i*} dreads that moment when his_{*i*} oldest child leaves home.
(King 2001:10)

On the other hand, if the basic interpretation of demonstrative descriptions is referential, definite and demonstrative descriptions should have some similarities with uncontroversially referential noun phrases like names, and they should have the same properties that individual terms have in predicate logic. Löbner (1985) argues that definite noun phrases in general have three properties shared by individual terms in predicate logic. First, individual terms cannot be negated. A large class of noun phrases have this property, and representative examples are given in (30). Some quantificational noun phrases can be negated, as shown in (31), confirming that they cannot be interpreted as individual terms.⁶

⁵See Neale (1990), as well as Russell (1905) and Isac (2006), for similar arguments about definite descriptions.

⁶The contrast between (30) and (31) disappears in stripping contexts, such as (i–ii) below. This is because stripping involves sentential negation, and Löbner’s point depends on

- (30) a. * Not the child is playing.
 b. * Not the children are playing.
 c. * Not that child is playing.
 d. * Not he is playing.
 e. * Not some child is playing.
 f. * John answered not the question.
 g. * John answered not the questions.
- (31) a. Not all children are playing.
 b. Not every child is playing.
 c. Not many children are playing.
 d. John answered not many questions.

Second, if a predicate P applied to an individual term t yields a true proposition, then $\neg P(t)$ cannot be true. Indefinites and some quantificational noun phrases lack this property: examples (32–34) below are not contradictions, and the noun phrases in these examples cannot be interpreted as individual terms. Definites have this second logical property, since (35–37) below are contradictions.

- (32) A girl is tall and a girl is not tall.
 (33) Several girls are tall and several girls are not tall.
 (34) Many girls are tall and many girls are not tall.
 (35) # The girl is tall and the girl is not tall.
 (36) # That girl [pointing at Mary] is tall and that girl [pointing at Mary] is not tall.
 (37) # She_{*i*} is tall and she_{*i*} is not tall.

Finally, for an individual term t , if $P(t)$ is false, then $\neg P(t)$ must be true. The second and third properties are different because Löbner assumes a logic in negation taking scope over just the noun phrase.

- (i) The child is playing, but not the adult.
 (ii) Some children are playing, but not every child.

which some propositions lack truth values. Again, definites have this property, while quantificational noun phrases and indefinites do not. For example, if (38) below is false, it does not follow that (39) is true; there could be some tall and some short children. But if (40) is false, it does follow that (41) is true, on the assumption that (40) only has a truth value if all the children are tall or all the children are short, and that its truth value is undefined for a mixed group. Demonstratives and other definite noun phrases behave likewise.

- (38) All the children are at least five feet tall.
- (39) All the children are less than five feet tall.
- (40) The children are at least five feet tall.
- (41) The children are less than five feet tall.

Keenan and Stavi (1986:260) also consider the last two logical properties to be characteristic of individuals, and add a final property: if an individual has property P and property Q , then the individual will also have property $P \wedge Q$. For example, if John is a student and John is a football player, it follows that John is a student and a football player. This final logical property holds of definite noun phrases and universal quantifiers.

If definite noun phrases are referential at heart, then their scopal possibilities are expected to be more limited than the scopal possibilities of quantificational noun phrases. In this chapter, I concentrate on data from scope, and argue that this is indeed the case: the scopal possibilities of definite noun phrases are most naturally explained on a referential analysis.

2.2.2 The typology of demonstrative descriptions

So far we have considered the place of demonstrative descriptions in the semantic typology of noun phrases. To investigate the semantics of demonstrative descriptions it is also important to consider fine distinctions among demonstrative descriptions.

The most obvious distinction to make, perhaps, is between the proximal demonstratives (*this, these*) and the distal demonstratives (*that, those*). There are clear distributional differences between the proximal and distal forms, as shown below.

- (42) [holding a painting] I like this/*that painting.
- (43) [pointing at a painting, medium distance away] I like this/that painting.
- (44) [pointing at a distant painting] I like *this/that painting.
- (45) The observations suggest this/*that idea: that the climate is changing.

I address the proximal/distal distinction in chapter 3.

Another important distinction to make is among different *uses* of demonstrative descriptions, as well as among definite descriptions. For example, definite and demonstrative descriptions can be used to refer to entities in the physical surroundings of the utterance, as in (46) below, to entities that were previously mentioned, as in (47), or to entities that are identifiable via the descriptive content alone, as in (48).

- (46) a. [pointing at a man] That man looks friendly.
b. The man by the fireplace looks friendly.
- (47) a. A man and a woman walked in. The man was smiling.
b. A man walked in. That man handed a flyer to another man.
- (48) a. The center of the universe is moving.
b. Those members of Congress who voted against the bill have proposed a new initiative.

In this chapter I argue that some aspects of the interpretation of demonstrative and definite descriptions depend on how the description is used and not on the lexical semantics of the determiner. The literature on the scope of definite and demonstrative descriptions has not always recognized this fact, leading to unnecessary confusion.

2.3 The scope of definite and demonstrative descriptions

2.3.1 A claim and a note on terminology

In the remainder of this chapter, I will argue that evidence from the semantic scope of definite and demonstrative descriptions supports a unified analysis in which both kinds of descriptions are indirectly referential. But first, because most of the terms in the previous sentence have been used with various meanings in the literature, a note on terminology is in order.

The notion of scope that I am primarily interested in is a semantic concept having to do with whether the value of the variable introduced by a DP varies, and if so, under what conditions. I take the diagnostic property of semantic narrow scope under negation to be variation: a variable whose value varies as a result of interpreting negation takes narrow scope. I take covariation to be the diagnostic property of scope with respect to a variable-binding operator: a variable takes narrow scope under an operator just in case the value of the variable covaries with the value of the variable that is bound by the operator. Conversely, a variable takes wide scope with respect to an operator just in case

its value does not covary with the value of the variable that is bound by the operator.

Some DPs, such as names, introduce variables whose values never depend on other elements in the logical form; by the diagnostic I have just described, these DPs always have widest scope. Other DPs, such as English bare plurals, consistently take narrowest scope under all operators in the sentence. I will refer to DPs that do not participate in scope ambiguity, whether they are interpreted with widest scope only or with narrowest scope only, as *scopally inert*.

While the semantic notion of scope can be implemented in simple examples by linking semantic scope to syntactic relations in Logical Form (see May 1977), a structural implementation of the notion is not always desirable. The distinction between the syntactic and semantic notions of scope is particularly clear in the case of examples involving telescoping and modal subordination. In (49) below, the object of the description *pawn* covaries with the variables associated with *every chess set* and *a spare pawn*, even though the definite description clearly does not fall within the syntactic scope of the universal quantifier. Similarly, in (50), the object of the description *thief* covaries with the variable introduced by *a thief*, which in turn varies across metaphysically accessible worlds.

- (49) Every chess set comes with a spare pawn. The pawn is taped to the top of the box.⁷
- (50) A thief might break into the house. The thief would steal the silver. (Roberts 1989)

In the terminology I will be using, then, the definite descriptions in (49–50) take

⁷This example is based on an example due to Kadmon (1987).

narrow scope under *every chess set* and *might* respectively; this is not claim that the syntactic scope of quantifiers and modals extends beyond the sentence boundary. The semantic notion of scope that I am interested can be naturally implemented in either a dynamic semantics or in the nonconfigurational theory of scope proposed by Farkas (1993, 1997b). It is also compatible with the view that some scopal relations are reflected in structural relations.

The terms *direct reference* (Kaplan 1977) and *indirect reference* (Roberts 2002) depend on a cluster of related assumptions about semantic type; modes of composition; and the connections among linguistic constituents, the representation of the discourse context, and entities in the world. Directly and indirectly referential noun phrases are both of type $\langle e \rangle$, contributing an entity to the compositional semantics, and by extension, the determiners of directly and indirectly referential noun phrases are of type $\langle et, e \rangle$. The “direct” vs. “indirect” distinction has to do with the internal semantic composition of type $\langle e \rangle$ noun phrases. The descriptive content of an indirectly referential noun phrase can in principle interact with the compositional semantics of the rest of the sentence, while the descriptive content of a directly referential noun phrase cannot. Direct and indirect reference approaches make clearly different empirical predictions: indirectly referential noun phrases can contain bound variables, and thus take narrow scope, while directly referential noun phrases are predicted to be scopally inert, taking widest scope only.

Although Kaplan (1977) and Roberts (2002) use similar terminology, they make very different assumptions about the nature of noun phrases that denote in type $\langle e \rangle$. For Kaplan, referential noun phrases have a direct and straight-

forward connection to entities in the real world; in other words, he is interested in “real” reference. Roberts is more concerned with the connection between linguistic constituents and discourse referents, or variables tracked in the representation of a discourse context. In other words, she is interested in “discourse reference.” Like Roberts, I will mainly be concerned with discourse reference, because that concept allows a unified account of widest-scope and narrow-scope noun phrases. Let’s now consider the semantic scope of various uses of definite and demonstrative descriptions.

2.3.2 Deictic uses of descriptions

Demonstrative and definite descriptions can be used to refer to something in the physical context of utterance. The deictic use is exemplified in (51–52) below, which are felicitous if uttered in a room containing a uniquely identifiable purring cat:

(51) The cat is purring.

(52) That/This cat is purring.

The deictic use of both definite and demonstrative descriptions requires that a unique referent be identifiable by the discourse participants. Deictic definite and demonstrative descriptions differ in how a unique referent may be identified: the descriptive content of a definite description must be satisfied by a unique referent in the context of utterance, while the choice of referent of a demonstrative description is sensitive to other factors, such as salience and speaker demonstrations. We’ll return to this issue in chapter 3. For now, I will focus on deictic uses in situations where the descriptive content is satisfied by a unique entity in the physical context of utterance.

What are the scopal possibilities of deictic descriptions? If the basic type of such descriptions is $\langle e \rangle$, then the common-sense prediction is that they will be scopally inert, taking widest scope only. If a noun phrase takes narrow scope under an operator, the value of the variable associated with it will vary. This is incompatible with a use in which the noun phrase is fixed to refer to an entity in the physical context. On the other hand, if deictic definite and demonstrative descriptions are basically quantificational, then nothing should stop them from being scopally active. A “deictic” use of a quantifier presumably involves restricting the domain of the quantifier to entities in the context of utterance. This is compatible in principle with a narrow scope interpretation.

What we find is that deictic descriptions are scopally inert, as predicted by the referential approach. Let’s start by looking at a simple example involving a quantificational noun phrase. In (53–54) below, if the definite and demonstrative descriptions are taken to depend on *every dog in my neighborhood*, then they have narrow scope under the universal quantifier.

- (53) Every dog in my neighborhood, even the meanest, has an owner who thinks that that dog is a sweetie.
- (54) Every dog in my neighborhood, even the meanest, has an owner who thinks that the dog is a sweetie. (Roberts 2002: ex. (11))

However, if the same descriptions are taken to be deictic, then they have wide scope. Below, the demonstrative description is accompanied by a demonstration to force a deictic interpretation.

- (53’) Every dog in my neighborhood, even the meanest, has an owner who thinks that that dog [pointing at Fido] is a sweetie.

Since definite descriptions are not accompanied by demonstrations, a deictic use of a definite description is harder to force, but a deictic interpretation of

the definite description in (54) is possible if there is a salient dog in the context. Suppose that the speaker's dog is running around the room—then the definite description in (54) can refer to that dog, and will take widest scope.

If we're careful about separating deictic and non-deictic uses, there is an alternate explanation of the contrast in (23–24), repeated below.

- (23) [Pointing at John throughout] If John and Mary switched places, the person I'm pointing at would be a woman.
- (24) [Pointing at John throughout] If John and Mary switched places, that person would be a woman. (Kaplan 1977, Roberts 2002)

The original observation is that the demonstrative description in (24) is scopally inert, and as a result the sentence only expresses the false proposition that John would be a woman if he switched places with Mary. The definite description in (23) can take narrow scope in the intensional context. Notice, however, that the demonstrative in (24) is necessarily deictic—it is accompanied by a demonstration and there is no potential antecedent in the preceding context. If the demonstrative is deictic, then we expect it to be scopally inert, regardless of whether demonstratives in general have direct or indirect reference. The definite description in (23), by contrast, is *not* required to be deictic—it can also be interpreted as a nondeictic, nonanaphoric description (we'll look at this use in more detail below), in which case it is not expected to be scopally inert.

The classic view of demonstrative descriptions is that the semantics of the determiner causes the demonstrative description to be scopally inert. The observations I have made here point towards a different view, one which depends more on the use of the description, as summarized below:

- (55) *Generalization: Scope and deictic descriptions*
Deictic uses of definite and demonstrative descriptions are scopally inert, taking widest scope.

This generalization is intuitively plausible and differs from the direct reference approach in that it leaves room for other uses of definite and demonstrative descriptions to have other scopal possibilities. We'll see shortly that other uses indeed can take narrow scope in some circumstances.

The view that deictic descriptions are always scopally inert is not universally accepted. King (2001) and Roberts (2002) have argued that some deictic demonstratives can take narrow scope under various operators. Before we move on, let's take a look at their examples.

King (2001) argues that the demonstrative descriptions in (56–57) below take narrow scope under negation.

(56) That monster of yours isn't under the bed. (p. 98)

(57) [pointing at a jewel] That diamond isn't real. (p. 107)

Example (56) is said to be a possible utterance of a mother trying to convince her child that monsters don't exist. (Perhaps it is really an anaphoric description.) But surely a parent would only use this sentence to play along with the child's belief in the monster and to assert that the monster is not under the bed.

King claims that example (57) is acceptable in a situation in which the speaker is trying to correct the addressee's false belief that a particular piece of cubic zirconium is a diamond. Notice, however, that (58–60) below can also be used to correct the same false belief, and cannot be interpreted as involving the demonstrative description taking narrow scope under negation.⁸

⁸King (2001:99) claims to find a contrast below, where only (i) can be asserted truthfully by a speaker who does not believe that any students can fly.

- (i) That student who can fly is not present today.
- (ii) That student who can fly is absent today.

- (58) That diamond is fake.
- (59) That diamond is cubic zirconium.
- (60) That diamond isn't a diamond.

It seems that in (58–60), the speaker “plays along” with the false belief that the demonstratum is a diamond in order to identify the intended referent, then goes on to contest that false belief. Something special is happening—but it doesn't require the demonstrative to be in the scope of negation. Instead, these examples seem to be cases in which the descriptive content of the demonstrative is interpreted at a world that does not correspond to the speaker's beliefs. Previous work on definite descriptions has shown that in general, the world at which the content of a description is evaluated need not correspond to either the speaker's or the addressee's belief-worlds. For example, Farkas (1981) observes that in (61) below, the speaker can use the definite description *the king* to refer to an imposter, even if both speaker and addressee are aware that the intended referent is not the true king. Here, the description *king* appears to be evaluated with respect to a world in which certain politically safe propositions are true. Note also that the world at which the description is evaluated need not be the world at which the main predicate is evaluated, since (62) can express a coherent proposition.

- (61) The king is giving a speech.
- (62) The king is a beggar. (Farkas 1981:70)

Jim McCloskey (p.c.) notes that there is a similar effect with pronouns:

- (63) She is really a he.

I do not find a contrast here, but if a contrast between examples like these does occur consistently for some people, then these data support King's view that (for one dialect of English), some demonstratives can take narrow scope under negation.

Example (63) could be used to correct the addressee’s mistaken belief that the referent of the pronoun is a woman. The gender features of pronouns are presuppositional (see Schlenker (2003) for discussion), and the most straightforward account of (63) is that the presupposition contributed by *she* is temporarily accommodated for the purposes of identifying the referent. Assigning wide scope to negation won’t help us here—negation is a “hole,” and the presupposition that the referent of *she* is a woman will therefore be a requirement on the main context regardless of the scope of negation. The bottom line here is that demonstrative descriptions whose content is not accepted by the speaker do not constitute an argument that demonstrative descriptions can take narrow scope under negation.

King (2001) also argues that deictic demonstratives can take narrow scope under attitude predicates. He considers three examples that are accompanied by demonstrations, and thus must be deictic; other examples are arguably other kinds of uses, and I will not discuss them here. The first relevant example is as follows. Suppose that Sherry, who works for Chanticleer toy company, believes that Alan has been elected CEO of Chanticleer. Sherry also believes that Alan dislikes her, and she’s unhappy about having him as her boss. Someone asks why Sherry is acting upset, and the speaker points at Alan and says:

(64) Sherry believes that that man who was just elected CEO of Chanticleer hates her.

King uses an indirect line of reasoning to argue that the demonstrative description in (64) must be interpreted as taking narrow scope under the attitude verb. He notes that the sentence is taken as an explanation of Sherry’s behavior. Now suppose that the demonstrative is interpreted with wide scope.

The sentence would then only entail that Sherry believes that Alan hates her. It would not make a claim about whether Sherry believes that Alan has been elected CEO. But Sherry has believed for some time that Alan hates her; this belief alone does not explain why she is upset at the time of utterance. King concludes that the wide-scope interpretation of the demonstrative in (64) is not viable because it does not account for our intuition that the sentence explains Sherry's behavior.

My account of this example differs from King's in two ways: I'll argue that the wide-scope interpretation of the demonstrative in (64) *is* compatible with the intuition that the sentence explains Sherry's behavior, and furthermore that the speaker's commitments with regard to (64) are *only* compatible with the wide-scope interpretation of the demonstrative.

It is true that in order to understand why Sherry is upset, we need to know two of Sherry's beliefs: that Alan hates her and that Alan has been elected CEO. (From this we can infer that Sherry expects Alan to make her life miserable once he is in his new position.) If the demonstrative description in (64) takes wide scope, the sentence entails that Sherry believes that Alan hates her and that the *speaker* believes that Alan has been elected CEO—not quite the right information. But it is a very short step from this information to the information that we are after. Assuming that the speaker is making a contribution that is relevant to the purpose of the conversation (finding out why Sherry is upset), we can conclude that the backgrounded proposition that Alan has been elected CEO is relevant information. And in general, speakers don't use idiosyncratic descriptions, but rather try to choose descriptions that

are shared by the addressees and/or the attitude holders; here we have no reason to think that Sherry's and the speaker's beliefs diverge, so it is fairly safe to conclude that Sherry also believes that Alan has been elected CEO. In short, although the interpretation of (64) in which the demonstrative takes wide scope does not entail the information that accounts for Sherry's behavior, the explanation of Sherry's behavior can be derived straightforwardly as a conversational implicature. Furthermore, this implicature can be cancelled, as shown by the fact that the speaker can continue as follows:

- (65) Sherry believes that that man who was just elected CEO of Chanticleer hates her. Actually, Sherry doesn't think that Alan has been elected CEO. She's just generally fed up with him.

So far we have seen that it is possible to assume that the demonstrative in (64) has apparent widest scope. The speaker's commitments on uttering the sentence show that the demonstrative *must* have apparent widest scope. Example (64) is only felicitous if the speaker believes that Alan has been elected CEO. In (66) below, the speaker publicly commits to the proposition that Alan hasn't been elected CEO, and the subsequent use of the demonstrative description in question is unacceptable. Example (67) shows that the speaker cannot use the demonstrative description and then clarify later that he or she does not accept its content. This shows that the speaker's commitment to the content of this demonstrative description is part of its conventional meaning and does not arise as a conversational implicature.

- (66) # Alan hasn't been elected CEO of Chanticleer, but Sherry believes that that man who has been elected CEO of Chanticleer [pointing at Alan] hates her.
- (67) # Sherry believes that that man who has been elected CEO of Chanticleer [pointing at Alan] hates her, although in fact Alan hasn't been

elected CEO of Chanticleer.

This speaker commitment is just what we'd expect from a wide-scope or scopally inert demonstrative description. It is surprising if the demonstrative takes narrow scope under the attitude verb.

King gives two more examples of deictic demonstrative descriptions that appear to take narrow scope under attitude verbs, shown below.

- (68) a. Ed [pointing at a jewel]: It isn't a diamond; but it is valuable.
b. Liz [pointing at the jewel]: Ed said that that diamond is very valuable.
- (69) a. Donnie [pointing at a transvestite]: That woman is beautiful.
b. Jeff [pointing at the transvestite]: Donnie said that that woman is beautiful. (King 2001:113-115)

In (68b), the speaker but not the attitude holder ascribes to the content of the embedded description *that diamond*, and King argues that the sentence is intuitively false. In (69b), the attitude holder but not the speaker ascribes to the content of the embedded description *that woman*, and King argues that the sentence is intuitively true. These intuitions point in the opposite direction from the speaker commitments in (64)—if the truth of the sentence depends on whether the attitude holder rather than the speaker ascribes to the content of the description, then the description has narrow scope under the attitude predicate.

The first thing to notice about these examples is that they are indirect speech reports, and that speech reports, even indirect ones, allow more room for context shifts than other kinds of attitude ascriptions (see, e.g., Recanati (2000), Schlenker (2003)). In order to make sure that this is not introducing irrelevant complications, we should replace *say* with *believe* in these examples:

(68b') Ed believes that that diamond is very valuable.

(69b') Donnie believes that that woman is beautiful.

In fact there is still a contrast in the acceptability of these sentences, so there is indeed something to be explained here. I differ from King, though, with regard to the nature of the contrast. The contrast seems less clear to me than a straightforward difference in truth value judgments. Examples (68b) and (68b') seem misleading rather than false, and this is to be expected if the choice of description is governed by the principles we saw above. In the given context, there is no reason for the speaker to use a description that Ed does not ascribe to, and so the default inference from this sentence is that Ed believes that the demonstratum is a diamond. Perhaps it is this inference, rather than the truth conditions of the sentence itself, that makes (68b) infelicitous. Note that if there is some independent reason to use the description *diamond*, and Ed's beliefs about whether the object in question is a diamond are irrelevant, then the sentence becomes more acceptable, and intuitively true:

- (70) Liz [pointing at a jewel]: Look at that diamond!
Ed [pointing at the jewel]: That isn't a diamond; but it is valuable.
[Ed leaves. Jed enters.]
Jed [pointing at the jewel]: That diamond doesn't look very impressive.
Liz: Well, Ed believes that that diamond is very valuable.

As for (69b) and (69b'), these sentences strike me as ironic at best. Note also that the version with *say* is more acceptable than the version with *believe*. This suggests that the description *that woman* should be treated as a case of partial quotation, in which the speaker plays along with Donnie's belief that the transvestite is a woman, perhaps to make fun of Donnie⁹. These exam-

⁹See Recanati (2000) for arguments that partial quotation is a pervasive phenomenon.

ples, then, are not conclusive counterexamples to the claim that demonstrative descriptions are scopally inert. What they show us again is that pragmatic principles affect the choice of descriptions in attitude ascriptions, and that this can obscure the scopal relations between descriptions and attitude predicates.

Our final alleged case of a narrow-scope deictic demonstrative is given in (71) below, which Roberts (2002) attributes to Heim. This example is uttered in a room containing two panels that are either mirrors or windows, but the speaker isn't sure which. Each panel displays an identical chair. In this situation, it's not clear whether we are viewing two chairs behind separate panes of glass or multiple reflections of one chair, and we can say:

- (71) That chair [pointing at the left panel] could well be that chair [pointing at the right panel].

Heim used (71) to argue against Kaplan's direct reference approach to demonstratives, but her argument (paraphrased in Roberts (2002)) also appears at first sight to be an argument that the demonstratives in (71) must take narrow scope under the modal. Example (71) can be uttered in a context c_1 containing one chair or in a context c_2 containing two chairs. Suppose that the demonstratives have wide scope or have direct reference. Then, in c_1 , (71) is necessarily true, and in c_2 , (71) is necessarily false; in both contexts, the sentence is equivalent to *That chair is that chair* (with appropriate demonstrations). Intuitively, (71) is not equivalent to its nonmodal counterpart, and both sentences are contingent. So the assumption that the demonstrative descriptions in (71) have wide scope or direct reference has led us astray.

Before we consider this argument, we should be aware of a possible source of confusion having to do with the nature of images, a confusion that is ir-

relevant to the argument above but that could lead us astray. We know that demonstratives can refer to images, as well as to more run-of-the-mill individuals. We also know that a speaker can refer to an image even if the speaker is unsure what the image depicts. For example, I might look at an old and blurry family photograph and exclaim, “That picture might be a picture of me!” In this sentence, *that picture* is used to refer to the photograph in my hand and *me* is used to refer to me, but the person depicted by the photograph varies among the epistemically accessible worlds. When we consider (71), we need to make sure that we don’t confuse variation of the images themselves across worlds with variation of the objects that the images depict.

Returning to the argument, it’s important to recognize that (71) is interpreted with epistemic modality. That is, the possible worlds that are considered when evaluating (71) are those that are consistent with what we accept to be true. Example (71) cannot be interpreted, for example, with metaphysical modality, in which we consider possible worlds that are identical to the real world up to the time of utterance. Epistemic modality is special in that an epistemic modal can take apparent wide scope with respect to anything, even proper names. In fact, Heim’s examples seem parallel to these standard examples of identity statements:

(72) Hesperus is Phosphorus.

(73) Hesperus might be Phosphorus.

That is, the fact that a deictic demonstrative description appears to take scope under an epistemic modal does not allow us to conclude anything about the interaction of deictic demonstratives with other types of modals.

To understand what is special about epistemic modality, it is helpful to keep in mind Stalnaker's (1977) remarks on two uses of possible worlds. According to Stalnaker, possible worlds are used to model the state of the context and to model the truth conditions of sentences. As a result, the interpretation of an utterance of a sentence depends on possible worlds in two ways: the worlds that represent the state of the context determine what proposition is expressed, and the worlds that represent the truth conditions of that proposition, compared with the context, determine whether the proposition is judged true or false. (This distinction will become important again for another purpose in chapter 3.) Now, epistemic modality has to do with the state of the context, while other types of modality do not, and the interpretations of certain normally scopally inert items like indexicals and names also depend on the state of the context. So we expect epistemic modality to interact with other aspects of interpretation that depend on the state of the context. If any operators are to take apparent scope over ordinarily scopally inert expressions, it ought to be epistemic modals that do so.

It is easy to verify, in fact, that deictic demonstratives do not take narrow scope under metaphysical modals. Suppose that Mary has just pulled a scarf at random out of a drawer. The drawer has red, blue and yellow scarves in it. Mary pulled out a red scarf, but she could just as well have taken a blue one. This situation can be described as in (74) below, where the non-deictic definite description takes narrow scope under a metaphysical modal.

- (74) Mary actually pulled a red scarf from the drawer, but the scarf could have been blue.

However, a deictic demonstrative cannot take narrow scope here. Example (75) below can only mean that a particular red scarf could have been a different color; the referent of *that scarf* does not vary across worlds.

- (75) Mary actually pulled a red scarf from the drawer, but that scarf [pointing at a scarf] could have been blue.

The contrast between (74) and (75) is quite sharp. Note also that the narrow-scope interpretation of the demonstratives in these examples is more plausible than the wide-scope interpretation, so the wide-scope interpretation in (75) is not being forced by independent contextual factors. All this is exactly what is predicted by the generalization in (55) above: it is the deictic use of the demonstrative in (75), rather than the demonstrative determiner itself or other pragmatic factors, that forces the description to take widest scope.

2.3.3 Anaphoric uses of descriptions

Definite and demonstrative descriptions also have an anaphoric use, in which the referent of the anaphoric description depends on a linguistic antecedent:

- (76) A man_{*i*} walked in. The man_{*i*} coughed.
(77) A man_{*i*} walked in. That man_{*i*} waved at another man.
(78) A man_{*i*} walked in. This man_{*i*} was wearing a red shirt.

In chapter 3 we will consider the conditions under which definite and demonstrative descriptions have an anaphoric interpretation. For now, let's focus on the scopal possibilities of anaphoric definite and demonstrative descriptions. If these noun phrases are referential and depend on an antecedent, then we expect that these too will be scopally inert, failing to participate in scopal ambiguity. Unlike the wide-scope deictic descriptions, however, we expect anaphoric

descriptions to take the apparent scope of their antecedents. An anaphoric description whose antecedent has widest scope will have widest scope, since it will not covary with any operators. An anaphoric description whose antecedent has narrow scope under an operator will covary with the antecedent, and thus take narrow scope under the same operator.

These predictions are exactly what we find. Indeed, this is such a point of common sense that it has not been challenged in the literature. The anaphoric descriptions in (79–82) have narrow scope antecedents, and take apparent narrow scope under the same operators. The anaphoric descriptions in (83–84) below have wide scope antecedents and take apparent wide scope.

- (79) a. The grant review board didn't return any proposal to that proposal's author.
b. The grant review board didn't return any proposal to the proposal's author.
- (80) a. Every dog in the neighborhood, even the meanest, has an owner who thinks that dog is a sweetie.
b. Every dog in the neighborhood, even the meanest, has an owner who thinks the dog is a sweetie. (Roberts 2002)
- (81) a. Scott will pick a number. That number Scott picks could be odd.
b. Scott will pick a number. The number Scott picks could be odd. (King 2001)
- (82) a. Mary believes that a unicorn is in her garden. She believes that unicorn is ruining her lawn.
b. Mary believes that a unicorn is in her garden. She believes the unicorn is ruining her lawn.
- (83) a. A dog down the street barks a lot. Every cat in the neighborhood is afraid of that dog.
b. A dog down the street barks a lot. Every cat in the neighborhood is afraid of the dog.
- (84) a. There is a unicorn in the garden. Mary believes that unicorn is ruining her lawn.

- b. There is a unicorn in the garden. Mary believes the unicorn is ruining her lawn.

Crucially, we do not find anaphoric definite and demonstrative descriptions within the scope of a new operator that is independent of the antecedent. For example, the sentences in (83) do not have an interpretation in which each cat is afraid of a different dog, and the examples in (84) do not have an interpretation in which the denotation of *the/that unicorn* covaries with Mary's belief-worlds. The descriptive generalization about the scope of anaphoric descriptions is given in (85) below.

(85) *Generalization: Scope and anaphoric descriptions*

The semantic scope of an anaphoric or demonstrative description is the semantic scope of its antecedent.

This generalization, like the one about deictic descriptions, ties scope restrictions to the uses of definite and demonstrative descriptions rather than to the lexical semantics of their determiners.

2.3.4 Descriptive uses of descriptions

Deictic and anaphoric definite and demonstrative descriptions are alike in that their referent is not established solely on the basis of the descriptive content. The descriptive content of a deictic or anaphoric description typically does not denote a singleton set (though it can), and the speaker must use information about the physical or discourse context to identify the referent. Definite descriptions can also have descriptive content that denotes a singleton set. In terms of the referential analysis, these descriptions refer on the basis of the descriptive content alone, and thus can be interpreted as neither deictic nor

anaphoric. The clearest cases of non-deictic, non-anaphoric descriptions are those with “semantically unique” descriptive content (a term due to Löbner (1985)), that is, with content that necessarily denotes a singleton set. A few examples of semantically unique descriptions are shown in (86–89) below. Note that these descriptions are acceptable out of the blue—they need not be anaphoric—and they can refer to entities that are not present in the context of utterance—the descriptions need not be deictic either.

- (86) The mother of John Smith arrived.
- (87) The current president of the US is a Republican.
- (88) John identified the smallest prime number.
- (89) The center of the universe is moving.

Demonstrative descriptions are acceptable with semantically unique content only under special circumstances. Semantically unique content is acceptable in a special construction which is licensed by a postnominal modifier, as shown in (90) below. The semantically unique demonstrative in (91), by contrast, is not acceptable; here there is no postnominal modifier and the special construction is not licensed.

- (90) John identified that prime number which is smallest.
- (91) *John identified that smallest prime number.

The special construction shown in (90) is the focus of chapter 4, and so for the purposes of this chapter I will set aside issues relating to the interpretation and licensing of this construction. In this section we’ll see that semantically unique instances of the special demonstrative construction have the same scopal possibilities as semantically unique definite descriptions.

Semantically unique demonstrative descriptions are also acceptable with an emotive interpretation described by Lakoff (1974), as shown in (92) below.

(92) That mother of John is quite a woman!

We will consider the emotive use in more detail in chapter 3. What is relevant for current purposes is that this use requires that the referent be familiar to all discourse participants. Even instances of this use with semantically unique content, then, will have either a deictic or an anaphoric interpretation, and we expect the scopal possibilities of emotive demonstratives to be the same as the scopal possibilities of deictic and anaphoric descriptions. The examples below verify this prediction. In (93a) we see that a deictic use of an emotive demonstrative takes apparent widest scope only—the sentence has only the incoherent reading, and does not allow the more plausible narrow-scope interpretation which claims that John might have been adopted by someone else.

- (93) [John is adopted. The speaker and addressee have just encountered John's highly eccentric adoptive mother.]
If circumstances had been different,
a. *that mother of John might have been someone else.
b. John's mother might have been someone else.

In (94a) we see that as expected, an emotive demonstrative must take narrow scope when it depends on an antecedent with narrow scope. (The “emotive” nature of the demonstrative causes it to tug more at the heartstrings than the definite description in (94b), apparently inviting us to empathize with the girls' success.)

- (94) Every girl chose a problem from the advanced section of the math textbook. After a lot of hard work,
a. each girl solved that problem she had picked.
b. each girl solved the problem she had picked.

It seems, then, that there is nothing new to be learned about scope from the emotive demonstratives. Let us therefore set them aside for the time being and focus on non-emotive semantically unique descriptions.

The descriptions in (95–97) below are the most obvious variety of semantically unique description: as long as the world parameter is fixed, the denotation of the descriptive content is necessarily a singleton set, and the descriptive content contains no variables. Such descriptions will, of course, take apparent widest scope over nominal quantifiers, as shown in (98–99) below.

- (95) the center of the universe
- (96) the smallest prime number
- (97) the current president of the US
- (98) Every mathematician identified the smallest prime number.
- (99) # Every First Lady advised the current president of the US.

It's not surprising under any analysis of definite noun phrases that descriptions like this are scopally inert: a necessarily singleton denotation leaves no room for covariation. What is more interesting is that semantically unique descriptions may contain bound variables. This is shown in (100–101) below. As above, these descriptions are nondeictic and nonanaphoric; the referent is identified entirely on the basis of the descriptive content. The descriptions in (100–101) are different from the previous examples in that they contain bound variables, and the denotation of the description covaries with the value of the bound variable. The descriptions are nevertheless semantically unique, because the denotation is a singleton set whenever the values of other variables are fixed. (That is, these examples display uniqueness under quantification, as discussed by Kadmon (1987)).

- (100) Every girl_{*i*} finished the book that she_{*i*} liked best.

(101) No girl_i finished the book that she_i liked least.

Examples like this are expected under the view that definite noun phrases are indirectly referential—if the descriptive content interacts with the compositional semantics, an external quantifier should be able to bind a variable in the description. Furthermore, uniqueness under quantification is necessary in order for the description to be successfully used to refer; if this condition is not met, the result is reference failure for at least one value of the bound variable.

Finally, under the indirect reference approach semantically unique definite noun phrases are expected to be able to take narrow scope under intensional operators, which should be able to bind the world parameter of the description. Examples (102–103) below contain semantically unique descriptions taking narrow scope under intensional operators. Just as expected, whenever the bound world variable is held constant, the denotation of the semantically unique description is a singleton set.

(102) If different voters had turned out in Ohio, the current president of the US might have been a Democrat.

(103) If different voters had turned out in Ohio, that person who won the election might have been a Democrat.

Examples (102–103) are most naturally interpreted as claims that someone other than George W. Bush might have won the election, not that Bush might have changed parties. On this reading, the world parameter of the definite or demonstrative description is bound by the modal.

So far, we have seen that it is possible for semantically unique descriptions to take narrow scope under nominal quantifiers and intensional operators. The remaining question is whether semantically unique descriptions can take narrow

scope under negation. I will ultimately conclude that definite and demonstrative descriptions cannot take narrow scope under negation, but first let's look at why some researchers have reached the opposite conclusion.

The scopal interactions between negation and DPs are complicated and poorly understood, and the facts about semantically unique descriptions are no exception. When investigating the relative scope of definite or demonstrative descriptions and negation, it is useful to consider descriptions that fail to denote in the world of evaluation, because the two possible scope relations result in very different interpretations. If the description takes wide scope, the sentence should lack a truth value, due to reference failure. If the description takes narrow scope under negation, the sentence should be true. In fact, it is well known that sentences containing definite descriptions and negation fall into two classes, which seem at first glance to correlate with the two predicted interpretations. The (a) sentences below are confidently judged true, while most speakers hesitate to give a truth value judgment for the (b) examples.¹⁰

- (104) a. The present King of France is not under this table.
b. The present King of France is not bald.
- (105) a. Bill Clinton didn't have breakfast with the present King of France this morning.
b. Rotten luck has not lately befallen the King of France.
- (106) a. That mathematician who proved Goldbach's Conjecture isn't sitting in that chair.
b. That mathematician who proved Goldbach's Conjecture isn't a woman.
- (107) a. Bill Clinton didn't have breakfast with that mathematician who proved Goldbach's Conjecture.
b. Rotten luck has not lately befallen that mathematician who proved Goldbach's Conjecture.

¹⁰These examples are based on examples due to Strawson (1964) and von Stechow (2004).

One way to make sense of this contrast is to assume that in a sentence like (104a), the description *King of France* takes narrow scope under negation, and the sentence is judged true in virtue of the nonexistence of a unique King of France. In a sentence like (104b), on the other hand, the description takes wide scope, resulting in reference failure and an undefined truth value. This is the approach taken by Neale (1990) and King (2001), and it dates back to Russell (1905). But while this approach can model the truth value judgments of the above examples, it does not explain the contrasts among these examples: why is it that definite and demonstrative descriptions are apparently forced to take wide scope over negation in some sentences and narrow scope in others?

It's important to note that a similar contrast is found in sentences that do not contain negation. For example, most speakers judge (108) below to be false and hesitate to give a truth value judgment for (109).

(108) The King of France is sitting in that chair.

(109) The King of France is bald.

If we take this contrast at face value, it suggests that the definite description in (109) is presuppositional—the sentence lacks a truth value because the existence and uniqueness presuppositions contributed by the definite are not met—while the definite description in (108) is not presuppositional—it asserts that a unique King of France exists, and as a result the sentence is judged false. The same reasoning can be extended to the sentences with negation. Negation is a “hole” for presuppositions, and will only take scope over asserted material; on the Russell-Neale-King approach, then, the content of the definite descriptions in the (a) examples in (104–107) is asserted, not presupposed, thus allowing the narrow scope interpretation.

However, von Stechow (2004) argues that the definite descriptions in all of the above examples have an existence presupposition, and that the truth value judgments do not accurately reflect the status of the presupposition. There are two reasons to believe that, in spite of the contrasts in truth value judgments, definite descriptions are uniformly presuppositional. First, the existence presupposition can always be challenged with “hey, wait a minute,” an expression that cannot be used to challenge the main assertion:

- (110) A: The King of France is sitting in that chair.
 B: Hey, wait a minute, I had no idea that France was still a monarchy.
 B': #Hey, wait a minute, I had no idea he was sitting in that chair.
- (111) A: The King of France is bald.
 B: Hey, wait a minute, I had no idea that France was still a monarchy.
 B': #Hey, wait a minute, I had no idea he was bald.

The second reason to believe that definite descriptions are uniformly presuppositional is that the existence implication undergoes presupposition projection. That is, complex sentences containing definite descriptions have an existence implication in configurations in which presuppositions are expected to project, and lack an existence implication in configurations in which presuppositions are not expected to project. For instance, sentence (112), in which a definite description is embedded in the antecedent of a conditional, has an existence implication, while in (113), the existence presupposition of the definite description in the consequent is blocked as expected.

- (112) If the king of France attends the APEC conference this week, there is a chance the proposed treaty will take effect soon. (von Stechow 2004: ex. (12))

- (113) If France is a monarchy, then the king of France will attend the APEC conference this week.

If definite descriptions are uniformly presuppositional, what accounts for the contrasts in truth value judgments in (104–109)? Researchers have pursued two strategies in accounting for these contrasts. The first, due to Strawson (1964), appeals to information packaging: nondenoting definites are said to produce the effect of a truth-value gap just when they are topical. The second strategy, suggested by Horn (1989) and developed in more detail by von Stechow (2004), is to posit alternative verification procedures for sentences that are subject to presupposition failure. Intuitively, it is possible to verify that some sentences are true or false regardless of whether a definite description refers successfully or not. For example, I can verify that (108) is false merely by observing that the demonstrated chair is empty; it doesn't matter whether there is a king of France or not.

While it is clearly of interest to compare these two strategies, what is important for present purposes is the evidence that definite descriptions are uniformly presuppositional. If so, the fact that some nondenoting definite descriptions in negative sentences give rise to clear judgments of falsity cannot be used as evidence that the definite descriptions in question have narrow scope under negation.

In this section we have considered the semantic scope of definite and demonstrative descriptions that are neither deictic nor anaphoric, i.e. those whose referents are identified on the basis of the description alone. We saw that such descriptions can take narrow scope under quantifiers and intensional operators, provided that Kadmon's (1987) uniqueness under quantification is satisfied. We

did not find convincing evidence of definite or demonstrative descriptions taking narrow scope under negation. In fact, Farkas (2002) observes that the kind of variation induced by negation is incompatible with a uniqueness requirement.

This leads to the following descriptive generalization:

- (114) *Generalization: Scope and descriptive uses*
Definite and demonstrative descriptions that are used to refer on the basis of the descriptive content alone may take narrow scope just in case uniqueness under quantification is satisfied.

This generalization is most consistent with the indirect reference approach. Contrary to the direct reference approach, it requires definite and demonstrative descriptions to be scopally active. And contrary to the quantificational approach, it takes the scopal possibilities of definite and demonstrative descriptions to be constrained by their semantics. If definite and demonstrative determiners are of type $\langle et, e \rangle$, and their descriptive content interacts with the compositional semantics of the rest of the sentence, then the descriptive generalization in (114) is just what common sense would suggest: a non-deictic, non-anaphoric description will denote successfully just in case the descriptive content denotes a singleton set for any value of the other variables in the sentence.

2.3.5 Bridging inferences

The final class of definite and demonstrative descriptions to consider includes descriptions licensed by *bridging inferences*, or background assumptions about the domain of discourse. The term *bridging inference* is due to Clark (1975), and that is the term I will use. Noun phrases that are licensed by bridging inferences have also been called *inferable* noun phrases (Prince 1981), *associative*

anaphors (Hawkins 1978) and *indirect anaphors* (Erk and Gundel 1987). A classic example of a bridging definite description is shown below. Notice that *the horn* is understood to be the unique horn of the car that drove by.

(115) A car drove by. *The horn* was honking.

It is often claimed in the literature that demonstrative descriptions are not licensed by bridging descriptions, due to the unacceptability of examples like (116) below (see, e.g., Hawkins 1991, Gundel et al. 1993, and Robinson 2005). However, the attested example in (117) shows that demonstrative descriptions *are* licensed by bridging inferences when they receive a contrastive interpretation.

(116) A car drove by. #*That horn* was honking loudly.

(117) Gentian jerked the plug out of the drain and climbed out of the tub. [The cat] leapt into the sink and began biting at *that plug*.¹¹

As some of the above terms suggest, some researchers consider bridging descriptions to be a special kind of anaphor. For example, *the horn* appears to depend indirectly on the antecedent *a car*. Other researchers (see especially Lbner (1985)) consider bridging descriptions to be a special kind of semantically unique description in which part of the descriptive content is covert. For example, *the horn* might be interpreted as something like *the horn of the car*, a semantically unique description that in this case happens to contain an anaphoric description. The two approaches differ in that the latter predicts bridging descriptions to be acceptable without an explicit antecedent. Thus, the description *the clouds* below could be treated as a bridging description on the latter approach (and interpreted as something like *the rain clouds*), but not on the former.

¹¹Pamela Dean, *Juniper, Gentian and Rosemary*, Tor, 1998: p. 300.

(118) It rained all day. *The clouds* were thick and black.

It turns out that regardless of how bridging descriptions are analyzed, their scopal possibilities are consistent with the descriptive generalizations proposed above. Bridging descriptions can take narrow scope, as shown in (119–121) below. If we take bridging descriptions to be a special type of descriptive use, then we expect the narrow-scope interpretations below to be licensed by inferences that support uniqueness under quantification. This seems to be the case. For example, (119) depends on the inference that each house has a unique roof. On the other hand, if we take bridging descriptions to be a special type of anaphoric use, then we expect the narrow-scope interpretations in (119–121) to be licensed by indirect antecedents with narrow scope. This also seems to be the case: for example, the bridging description in (119) depends on the bound variable associated with *every house*. Example (121) is, of course, problematic for the anaphoric analysis, just as (118) is.

(119) Every house has a leak in *the roof*.

(120) The girls received individualized reading lists with sections labeled ‘on reserve’ and ‘in bookstore.’ Every girl went to the reserve section of the library and read *those books* first.¹²

(121) It might rain tomorrow. *The clouds* would interfere with our astronomy project.

The licensing conditions for bridging definites and demonstratives are discussed in more detail in chapter 3. The important fact for the purposes of this chapter is that the scopal possibilities of bridging descriptions are consistent with the generalizations about scope that we have already seen.

¹²This example is due to Donka Farkas (p.c.).

2.4 Conclusion

In this chapter I have presented three empirical generalizations that tie the scopal possibilities of definite and demonstrative descriptions in part to their semantics and in part to their use. I have argued that deictic uses of definite and demonstrative descriptions have widest scope only, that anaphoric uses have the scope of their antecedents, and that descriptive uses participate in scope ambiguities, limited only by a uniqueness requirement.

These generalizations are exactly what common sense would suggest, given an indirect reference approach to definite and demonstrative descriptions. If the descriptive content of a definite or demonstrative description interacts with the rest of the compositional semantics, and therefore can contain bound variables, then we expect definite and demonstrative descriptions to participate in scope ambiguity. If definite and demonstrative descriptions denote entities and are subject to a uniqueness condition, we expect narrow-scope interpretations to be licensed by something like Kadmon's (1987) uniqueness under quantification. Furthermore, it is not at all surprising for deictic and anaphoric uses of definite and demonstrative descriptions to limit the scopal possibilities. If a description is used to refer to an entity in the physical context of utterance, then of course the semantic value of the description will not covary with any bound variables. And if the description is used to corefer with an antecedent, then of course the semantic value of the anaphorically used description will vary just in case the value of the antecedent does.

The generalizations also differ quite sharply from the predictions made by direct reference and quantificational approaches. On a direct reference ap-

proach, in which demonstratives are classified with proper names, it is surprising for demonstrative descriptions to take narrow scope at all. In general, the direct reference approach accounts very well for the interpretation of deictic uses of demonstrative descriptions and not at all for other uses. This is why I have argued that it is the deictic use, not the semantics of demonstrative determiners, that gives the effect of “direct reference.” On a quantificational approach, meanwhile, it is surprising to find any constraints at all on the scopal possibilities of definite and demonstrative descriptions.

What I hope to have established, then, is that definite and demonstrative descriptions form a semantic natural class, sharing two basic characteristics, namely indirect reference and a uniqueness condition. The next chapter investigates the semantics of the determiners in this class in more detail.

Chapter 3

Demonstrative Determiners

3.1 Definiteness and domain restriction

We now switch gears from lumping to splitting. Having established that demonstrative and definite descriptions are alike in having identical scopal possibilities and being indirectly referential, the obvious next question is how demonstrative and definite determiners differ.

In the big picture, though, the questions addressed in this chapter are closely related to the conclusions of the previous one. In this chapter I pursue a uniqueness-based account of the meaning of definite and demonstrative descriptions. Why would any descriptions be subject to a uniqueness condition in the first place? The obvious reason is so that descriptions can be used to refer. One way to think about the analysis I am about to develop, then, is as an investigation into the conditions under which definite and demonstrative descriptions refer successfully.

3.1.1 Uniqueness and domain restriction

The point of departure for my proposal is a uniqueness-based approach to definiteness. In other words, I take definite and demonstrative descriptions to presuppose that their descriptive content denotes a singleton set. This approach has a long history in the literature, beginning with Russell (1905) and pursued by, among many others, Kadmon (1987), Heim (1990), Neale (1990), Abbott (1999, to appear), and Recanati (2004). The semantic common denominator of definiteness has also been argued to be familiarity (see, e.g., Kamp 1981, Heim 1982) and salience (Lewis 1979, von Stechow 1997a,b). Nothing in my proposal precludes definite noun phrases from also being subject to a familiarity or salience condition, as defended, e.g., by Roberts (2003) (but see Abbott (1999, to appear) for arguments that the familiarity implication of definite descriptions is merely a conversational implicature). However, I argue below that a familiarity condition alone is insufficient and that the uniqueness condition is a crucial component of the semantics of definiteness.¹ Furthermore, the relativized uniqueness condition that I adopt derives the effect of familiarity in many cases, because the uniqueness requirement may be satisfied relative to the discourse context; it is not clear whether a separate familiarity condition is necessary.

Many researchers have pointed out that plural definite descriptions are subject to a maximality or exhaustivity condition, rather than a uniqueness condition. For example, the subject of (1) below refers to all of the planets in the solar system.

¹See Rawlins (2005) for discussion of the implications of *of*-possessive definites for uniqueness and familiarity conditions on the definite article.

(1) The planets in the solar system have elliptical orbits.

As Abbott (to appear) points out, either a maximality condition or a uniqueness condition can be taken as basic. If the maximality condition is basic, then the content of a singular definite description denotes the maximal element in a set of atoms, which is defined just in case the denotation is a singleton set; hence, singular definite descriptions require uniqueness. On the other hand, if the uniqueness condition is basic, the uniquely identifiable member of a set of plural individuals is the maximal one; hence, plural definite descriptions require maximality. In what follows, I will continue to discuss a uniqueness condition, and assume that the counterpart of uniqueness in the domain of plurals is maximality. My analysis is fully compatible with either the assumption that uniqueness is basic or the assumption that maximality is basic.

Now, an obvious problem for the uniqueness-based approach, taken at face value, is that definite descriptions often have descriptive content that does not denote a singleton set relative to the model. Research pursuing familiarity- or salience-based approaches to definiteness has used this obvious problem to argue against the uniqueness condition. However, the problem is not an insurmountable challenge for the uniqueness-based approach. On the account that I will be adopting, the uniqueness condition on definite descriptions is refined by appealing to contextual domain restriction.

Contextual domain restriction is the well-known phenomenon in which a nominal denotes some contextually determined subset of the individuals satisfying its content. For example, (2) below is most likely to be understood as a claim about a contextually relevant group of students, and not about every

individual who ever took a class in the entire universe.

(2) Every student wrote a term paper.

Definite descriptions can also be taken to be subject to this phenomenon. Example (3) is parallel to (2) in that it is also understood to be a claim about a contextually determined group of students.

(3) The students wrote term papers.

Under the refined uniqueness approach, then, a definite description requires its descriptive content to denote uniquely relative to a contextually restricted domain. This is a popular approach to natural language definite descriptions, and is defended (with various implementations) by Barwise and Perry (1983), Löbner (1985), Roberts (2002, 2003), and Recanati (1996, 2004), among others.

There has not been much discussion of the role of contextual domain restriction in the interpretation of demonstrative descriptions, but recent accounts of demonstrative descriptions due to King (2001) and Wolter (2004) are suspiciously reminiscent of domain restriction. On these two accounts, the descriptive content of a demonstrative description undergoes intersective modification by an implicit property. According to King (2001), the implicit property is determined by speaker intentions, and according to Wolter (2004), the implicit property is determined by contextual salience. Intersective modification by a contextually determined salient property is also a popular implementation of domain restriction. Perhaps this is not a coincidence.

What previous accounts of demonstrative descriptions *do* appeal to are special mechanisms of achieving reference. For example, Roberts (2003) proposes that demonstrative determiners have an extra argument saturated by a possibly abstract speaker demonstration, King (2001) proposes that demonstrative

determiners have an extra argument saturated by a speaker intention to refer, and Wolter (2004) proposes that demonstrative determiners have an extra argument saturated by the property of contextual salience. Demonstrations, intentions and salience are not factors that other noun phrases are thought to have access to, so these accounts all claim that demonstrative noun phrases have special resources for referring. Significantly, once these factors are taken into account, demonstrative descriptions do not appear to be subject to domain restriction. For example, in (4) below it is not necessary to restrict the denotation of *painting* to a contextually determined domain. The referent of the demonstrative description is fully determined by the relevant demonstration, speaker intention, or level of salience.

(4) [pointing at a painting] That painting is beautiful.

If this is an accurate characterization of demonstrative descriptions, they are unique among DPs with descriptive content in not being subject to domain restriction.² If demonstratives were instruments of direct reference, that would not be surprising, as they would not contribute a set that could be restricted in the first place. But if demonstratives refer indirectly, as I have argued in the previous chapter, it is highly surprising for demonstrative descriptions to be the single exception to the otherwise pervasive application of domain restriction.

In what follows, therefore, my working hypothesis is that demonstratives *are* subject to domain restriction. I will argue, first, that mysterious and demonstrative-specific mechanisms like speaker intentions and demonstrations

²Free-choice indefinites might be another exception: Kadmon and Landman (1993) argue that free-choice *any* forces domain widening and thus overrides contextual domain restriction, and Kratzer and Shimoyama (2002) give a similar account of the German *irgend*-series. See Farkas (in press), however, for an argument that free-choice indefinites are subject to contextual domain restriction after all.

can be reduced to the admittedly still mysterious, but much more widespread, mechanism of contextual domain restriction. I will further argue that an account based on domain restriction can account for a wider range of facts than the one based on demonstrations or speaker intentions. The remainder of this section outlines the proposal that I defend in this chapter.

3.1.2 Overview of the proposal

There are two popular implementations of domain restriction. One is to assume that nominal predicates are intersected with contextually salient properties. (See von Stechow (1994) for discussion of this approach.) For example, the definite description *the cat* would be interpreted as shown in (5). The free variable P ranges over properties and might be saturated, e.g., with a property like “ x is in this room.”

$$(5) \quad \llbracket \text{the cat} \rrbracket = \iota x. \text{cat}(x) \wedge P(x)$$

The second implementation of domain restriction ties the effects of domain restriction to the modal parameter of the nominal predicate. It is widely accepted that predicates, including the predicates contributed by NPs, are interpreted relative to a possible world. Furthermore, different predicates in one clause may be interpreted relative to different worlds. For example, the predicate *castle* in (6b) below is interpreted relative to Mary’s belief-worlds, while the main predicate of the sentence is interpreted relative to the actual world.

- (6) a. Mary thought that there was a castle behind the trees.
 b. The castle turned out to be a huge oak tree. (Farkas 1993: ex. (55))

We need to assume, therefore, that each predicate enters the compositional semantics with its own modal parameter, determining which possible world the predicate is interpreted at. I assume that each predicate has an extra argument position that is saturated with a situation variable—an assumption that does not require, incidentally, that the situation argument of a predicate have exactly the same status as other arguments. One could also assume that predicates are interpreted relative to situation indices, though it is crucial that each predicate have its own index; an indexical approach in which an entire sentence is interpreted relative to a single situation index will not be adequate.

Now, as long as we take the modal parameters of predicates to be situation variables rather than world variables, the modal parameters also do the work of domain restriction. Following Kratzer (1989), I take a situation to be a part of a possible world, and a possible world to be a maximal situation. Suppose that the descriptive content of *the cat* is interpreted relative to a contextually salient situation, as shown below:

$$(7) \quad \llbracket \text{the cat} \rrbracket = \iota x. \text{cat}(x)(s)$$

The free situation variable may be saturated, e.g., with the situation corresponding to the context of utterance, and the predicate *cat* will denote the set of cats who are in the context of utterance. The situation-based approach to domain restriction has been defended most recently by Recanati (1996, 2004) and Kratzer (2004); earlier work includes Barwise and Perry (1983).

In simple examples the two implementations of domain restriction have the same effect. However, Kratzer (2004) argues against an account based on intersective modification, observing that merely making a property salient does not guarantee that it can be used to restrict a domain. For example, (8b) below

cannot be interpreted as a claim about phonologists, even though the property of being a phonologist was explicitly introduced in the previous sentence and could be intersected with the set of linguists to give the set of phonologists.

- (8) a. Lisa is a phonologist.
b. I think most linguists would agree with what she said.

In light of this observation, I will adopt the situation-based approach to domain restriction. So far I have suggested that definite and demonstrative descriptions are subject to a uniqueness condition that is satisfied relative to a situation. This can be captured more concretely by taking definite and demonstrative descriptions to share a presupposition-triggering semantic feature ³:

- (9) [unique]: The NP complement denotes a singleton set relative to its situation parameter.⁴

This leaves us with two pressing questions: what is the value of the situation parameter of the relevant NPs, anyway? And how do demonstrative determiners differ from the definite article if they do not have access to special means of reference like demonstrations or speaker intentions? My central proposal is that the answers to these questions are related: demonstrative determiners differ from the definite article in that they constrain the value of the situation argument of their nominal complement.

The details of my proposal depend on a distinction among situations that has its roots in very general considerations about modality. We therefore need to take a step back and consider how situation variables are used. Stalnaker (1977) observes that world (or situation) variables are used in two ways when

³See Schlenker (2003) for a similar treatment of the gender, number and indexicality presuppositions associated with personal pronouns.

⁴Here and throughout I assume a DP syntax, as proposed by Abney (1987).

a sentence is uttered: to establish what proposition has been expressed and to determine the truth value of the proposition.⁵ The situation variable associated with the main predicate plays the latter role, while the situation variables associated with nominal constituents play the former role, since fixing the reference of referential expressions is one of the factors that determine what proposition has been expressed. In principle, it is possible for the same situation to play both roles in a sentence—to fix the reference of referring expressions (and thus determine what proposition is expressed) and to determine the truth value. It is also possible for different situations to be used for each purpose.

This very basic observation allows us to divide the situation variables associated with a particular sentence or discourse into two groups: those associated with main predicates, and thus responsible for determining truth conditions, and all other situation variables. Let's call the former *default situations*: these are situation variables that must be defined anyway in order to interpret main predicates, and intuitively, the simplest thing we can do to interpret a sentence is to use only default situations. Let's call other situation variables *non-default situations*.

The distinction among situation variables that I have just made appears to have nothing to do with the main goal of this chapter, namely analyzing definite and demonstrative determiners. However, I will argue that it is just the distinction we need in order to understand the difference between demonstrative determiners and the definite article. What I propose is that demonstrative determiners require that their descriptive content be interpreted relative to a

⁵Kaplan's (1977) character/content distinction captures a similar observation.

non-default situation. I also argue below that, although the definite article does not constrain the modal anchor of its nominal complement, a markedness relation between the definite article and the demonstrative determiners ensures that definite descriptions are interpreted relative to default situations.

To implement this proposal, we need one more presupposition-triggering semantic feature, this one specific to demonstrative determiners:

- (10) [non-default]: The head noun is relativized to a non-default situation.

I also assume that definite and demonstrative determiners bear numbered indices corresponding to the situation variables that saturate the situation arguments of their nominal complements. Putting these pieces together gives us the lexical entries in (11–12). The definition of default situation in (13) will pick out the situation variables associated with the main predicate(s) in a given sentence.

- (11) $\llbracket the_n \rrbracket$: $\lambda\mathcal{P}.P(s_n)$ is a singleton set.
If defined, denotes $\iota x.\mathcal{P}(x)(s_n)$
- (12) $\llbracket that_n \rrbracket$: $\lambda\mathcal{P}.P(s_n)$ is a singleton set and s_n is non-default.
If defined, denotes $\iota x.\mathcal{P}(x)(s_n)$
- (13) Given a sentence A, a situation variable s is a *default situation* just in case it is bound in A. Otherwise s is a *non-default* situation.

In order to understand what predictions this proposal makes, we need to know something about the nature of the situations relative to which main predicates are interpreted. Farkas (1993, 1997b) and Percus (2000) observe that the modal parameters of main predicates are relatively constrained. For example, (14) below, uttered out of the blue, is not a claim about someone’s dream worlds, in spite of the surreal content.

- (14) The unicorn was eating roses.

Out of the blue, (14) can only be understood as a claim about the “described situation” (in the terminology of classic situation semantics) or the situation corresponding to the model of the current discourse (in the terminology of a dynamic semantics). Sometimes the “described situation” or the situation corresponding to the (abstract) discourse context happens to be the situation corresponding to the physical context of utterance. For example, (15) below is most naturally understood in this way.

(15) Look out! The mountain lion is going to attack!

However, the discourse context or described situation does not always correspond to the context of utterance, and therefore “discourse context” should not be taken as a synonym for “context of utterance.”

Whereas unembedded main predicates are interpreted relative to a situation corresponding to the discourse context, a main predicate that is syntactically embedded directly under an intensional operator is always interpreted relative to the situation variable that is bound by that operator. For example, the predicate *x was eating roses* in (16) below is interpreted relative to Mary’s dream-worlds and not, say, relative to the situation corresponding to the discourse context.

(16) Mary dreamed that the unicorn was eating roses.

The major apparent exception to these generalizations is the interpretation of main predicates in modal subordination contexts. For example, the predicate *x was eating roses* in (17b) below is most plausibly interpreted relative to Mary’s dream-worlds, even though it occurs in a simple extensional sentence.

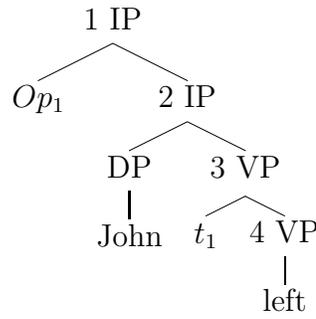
- (17) a. Mary dreamed that there was a unicorn in her garden.
b. The unicorn was eating roses.

However, modal subordination can be understood as a type of context shift. That is, after the utterance of (17a), the discourse participants have the option of (temporarily) treating Mary’s dream as the discourse context. On this view of modal subordination we can maintain the descriptive generalization that unembedded main predicates are interpreted relative to the discourse context (see Farkas 1993, 1997b, for further discussion).

The situations relative to which main predicates are interpreted can be of different sizes. Kratzer (2003) argues that there is a systematically available choice between “world talk,” in which main predicates are interpreted relative to maximal situations, and “situation talk,” in which they are interpreted relative to a situation that is just large enough to verify the information that has been established about a discourse context or intensional context. Kratzer uses this situation/world distinction to explain the appearance and disappearance of certain scalar implicatures. Below we’ll see that the distinction is also helpful in describing the interpretation of nominal predicates.

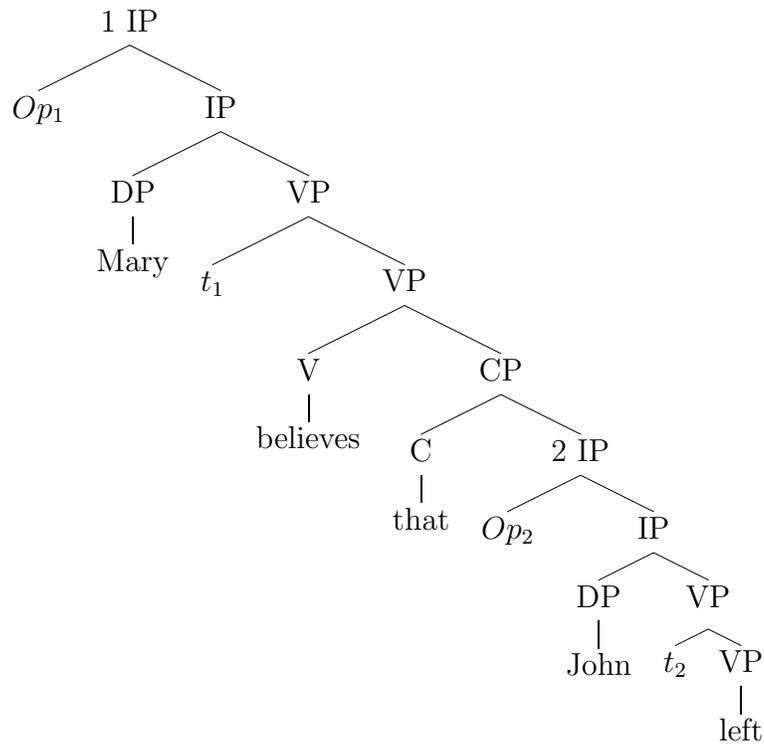
Percus (2000) proposes a structural implementation of these constraints which allows us to be very explicit about the relevant generalizations. In Percus’s system, an abstraction operator moves from VP to adjoin to IP, syntactically and semantically binding the situation argument of the main predicate. This ensures that the situation variable associated with the main predicate will always be locally bound, with its value set either by a c-commanding intensional operator or (in the case of the highest VP) by interpretation relative to the discourse context. Simple examples are shown below.

(18)



- a. $\llbracket 4 \rrbracket$: $\lambda s \lambda x. \text{leave}(x)(s)$
- b. $\llbracket 3 \rrbracket$: $\lambda x. \text{leave}(x)(s_1)$
- c. $\llbracket 2 \rrbracket$: $\text{leave}(j)(s_1)$
- d. $\llbracket 1 \rrbracket$: $\lambda s. \text{leave}(j)(s)$

(19)



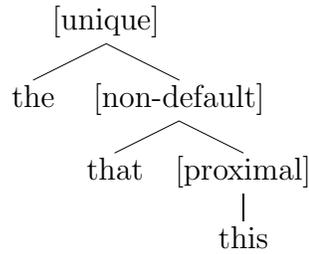
- a. $\llbracket 2 \rrbracket$: $\lambda s. \text{leave}(j)(s)$ (see above)
- b. $\llbracket \text{believe} \rrbracket$: $\lambda p \lambda s \lambda x. \forall s' \in \text{Dox}_x(s). p(s')$
- c. $\llbracket 1 \rrbracket$: $\lambda s \forall s' \in \text{Dox}_m(s). \text{leave}(j)(s')$

The situation variables associated with main predicates—what I have been calling default situations—thus take on a relatively limited set of values: the

described situation or situation corresponding to the discourse context, which in some cases also corresponds to the context of utterance, the situation corresponding to information that has been established about an intensional context, and the maximal situations (i.e. worlds) containing each of these. The prediction made by my central proposal is that definite descriptions will be interpreted relative to the types of situations that I have just described (though not necessarily relative to the situation variable associated with the local main predicate), while demonstrative descriptions will be interpreted relative to situations that are distinct from the ones that I have described here. In sections 3.2 and 3.3, I show that these predictions are borne out and that the proposal allows for a unified account of a wide range of uses of definite and demonstrative descriptions. I first discuss uses of definite and demonstrative descriptions in simple extensional sentences, and then extend the account to quantificational and intensional sentences. As in chapter 2, we will find that how descriptions are used is as important as their truth-conditional semantics, and the data in the next sections is therefore organized around deictic, anaphoric and descriptive uses of definite and demonstrative descriptions.

A complete analysis of English demonstrative determiners must of course account for the difference between *this* and *that*, and I turn to this issue in section 3.4. My account of contrasts among demonstrative determiners relies on the same kind of markedness relation that I appeal to in distinguishing *the* from demonstrative determiners. More specifically, I argue that *this* is subject to a proximity condition, while *that* is unmarked for proximity. This gives us the markedness hierarchy schematized in (20) below.

(20)



One implication of the analysis is that it is not sufficient to consider the semantics of each determiner in isolation—their interactions are also important.

3.2 Constraints on domain restriction in extensional contexts

In this section we will consider the distribution of definite and demonstrative descriptions in simple extensional sentences and observe how the distribution is consistent with the proposal outlined above. The section begins with simple examples of deictic, anaphoric and bridging uses of definite and demonstrative descriptions and describes the distribution of such examples in situation terms. We then turn to the distribution of definite and demonstrative determiners with semantically unique content, which motivates a relative markedness relation among the determiners in question. The section concludes by considering some apparent complications and shows that they do not affect the proposal.

3.2.1 Basic cases

Consider first the ordinary deictic demonstratives in (21) below. In this example, the descriptive content does not determine a unique referent in the context of utterance; the referent is determined for each demonstrative description by

a speaker demonstration, together with the descriptive content. In situation terms, we might think of the demonstration as setting up a new situation consisting of the speaker, the pointing gesture and whatever things the speaker might be pointing at. The descriptive content denotes uniquely in this new situation.

- (21) I like that/this painting [pointing at a painting] but not that/this painting [pointing at another painting].

Next, consider the deictic demonstrative in (22) below. This context contains a salient subsituation consisting of a loud telephone conversation, and the descriptive content of the demonstrative description (*man*) denotes uniquely relative to this subsituation.

- (22) [In a crowded restaurant. One diner is talking loudly on his cellphone.]
That/This man is annoying. (Roberts 2002)

Demonstrative descriptions can also be used to pick out elements of the context of utterance that may have been unnoticed by the addressee. For example, (23) below may be uttered in a room containing a single bucket, and it suggests that the speaker is not assuming that the addressee has noticed that there is a bucket.

- (23) That/This bucket is full of water.

- (24) I have to review that book over there, under those papers.

In situation terms, we can think of demonstratives whose referents are potentially unnoticed or forgotten as “zooming out” on the context of utterance to include additional individuals.

Unlike demonstratives, definite descriptions cannot have their reference fixed on the basis of a speaker demonstration or the salience of the intended referent:

- (25) # I like the painting [pointing at a painting] but not the painting [pointing at another painting].
- (26) [In a crowded restaurant. One diner is talking loudly on his cellphone.]
#The man is annoying.

This suggests that deictic definite descriptions must be relativized to the entire context of utterance; “zooming in” on a salient subpart of the context is not an option.

Can a definite description “zoom out” to refer to a previously unnoticed or hidden element of the context of utterance? The felicitous imperatives in (27–29) below suggest that this is indeed a possibility.

- (27) [Teacher to students:] Turn the page in your workbook and circle *the clown*. (based on an example due to Roberts (2003))
- (28) Pass me *the book hidden under those papers*.
- (29) Pass me *the hidden book*.⁶

On the other hand, the definite descriptions in the declaratives below are less acceptable than the demonstrative:

- (30) # I have to review the hidden book.
- (31) ? I have to review the book over there, hidden under those papers.
- (32) I have to review that book over there, hidden under those papers.

These contrasts suggest that the acceptability of (27–29) reflects the forward-looking nature of imperatives rather than the ability of definite descriptions in general to refer to unnoticed elements of the physical context of utterance. An imperative indicates certain expectations about the addressee’s future actions. The definite descriptions in (27–29) are acceptable because the addressee’s actions in complying with the command will cause the addressee to notice the intended referent. For example, a cooperative addressee, hearing (28), will look

⁶This example is due to Donka Farkas (p.c.).

under the demonstrated papers and find the referent of *the book hidden under those papers*. Note that (29) is rather unkind; this is because it suggests that the speaker expects the addressee to undertake a treasure hunt—the addressee must search the context of utterance without help in order to be able to identify the referent of *the hidden book*. The declaratives in (30–31), meanwhile, convey nothing about the actions the addressee would have to undertake in order for the referent of the definite description to be noticed. Example (31) is improved by the embedded demonstrative elements *there* and *those papers*, which arguably have the same effect as simple demonstrative noun phrases.

If there is a unique individual in the physical surroundings of the utterance satisfying a description, and that individual is in plain sight but hasn't been mentioned, it may not be entirely clear whether the addressee has noticed it. In such cases we find that demonstrative and definite descriptions appear to be interchangeable. If there is one bucket in the room and it isn't hidden, then (23), repeated below, and (33) are both acceptable. Here, the choice of determiner depends on whether the speaker presumes that the domain of discourse needs adjustment or not, and neither assumption is unreasonable.

(23) That/This bucket is full of water.

(33) The bucket is full of water.

The situation corresponding to the context of utterance is a *default situation*, because it is a situation relative to which a main predicate is interpreted when the discourse context happens to correspond to the context of utterance. What we have seen here, then, is that deictic definite descriptions are licensed just in case they refer uniquely relative to this default situation, while deictic demonstrative descriptions consistently refer uniquely relative to a salient

situation that is distinct from the context of utterance. The situation-based account can therefore explain deictic uses of definite and demonstrative descriptions without taking the lexical semantics of demonstrative determiners to make explicit reference to demonstrations or speaker intentions.

One complicating factor that needs to be recognized here is that postnominal modifiers can be relativized to independent situation variables. (See Dayal (1998, 2004) for discussion, and chapter 4 for the interaction between demonstrative determiners and postnominal modifiers.) As a result, sentences like (34–35) below are acceptable when uttered in a room containing several men.

(34) The man over there looks interesting.

(35) The man standing next to that woman looks interesting.

Notice that the postnominal modifiers in these examples contain a demonstrative determiner and its adverbial counterpart, both conceivably indicating that the postnominal modifiers are relativized to non-default situations. Notice also that once the interpretation of the modifier is fixed, the description as a whole refers uniquely relative to the context of utterance. As long as we recognize the independence of postnominal modifiers, examples like (34–35) above are not counterexamples to the claim that deictic definite descriptions refer uniquely relative to the context of utterance.

Next, let's consider anaphoric descriptions. In general, anaphoric definite and demonstrative descriptions depend on the discourse context or the “described situation” rather than on the physical surroundings of the utterance. Definite and demonstrative descriptions differ in how they may be related to the discourse context.

Some anaphoric demonstratives can be understood as “zooming in” on a salient subpart of the discourse context. In (36a) below, for example, the available salient subpart of the described situation is the subpart involving the second entrance. I’m assuming here that because there is no way to literally point to subparts of the described situation, the most recently evoked subpart is most salient.⁷

- (36) A woman_i entered from stage left. Another woman_j entered from stage right.
a. That/This woman_j was carrying a basket of flowers. (based on Roberts 2002)

Abbott (2002) observes that demonstrative descriptions are usually better paraphrases of donkey pronouns than definite descriptions are. This fact is also consistent with the situation-based account. In the demonstrative version of the well-known sageplant example, shown below, the restriction of the quantifier evokes a set of situations in which a person buys a single sageplant; the demonstrative in the nuclear scope “zooms in” on these small situations.

- (37) Every person who bought a sageplant bought eight others along with that sageplant.

Anaphoric demonstratives can also refer to an individual who has been previously mentioned or encountered by the interlocutors but who might have been subsequently forgotten, as in in (38–39) below.

- (38) Do you remember that man we met last night?

⁷Klaus von Heusinger (p.c.) observes that the effect of recency depends entirely on precedence and is unaffected by syntactic structure. Thus, the demonstrative pronoun in (i) below refers unambiguously to the most recently mentioned woman and not to the woman introduced by the syntactically highest noun phrase.

- (i) John met a woman_i who was talking to another woman_j. That woman_j was smiling.

(39) Do you remember that man?

In general, then, anaphoric demonstrative descriptions can be understood as referring uniquely relative to a salient situation that does *not* correspond to the entire, unadjusted discourse context. Anaphoric definite descriptions, by contrast, are unacceptable when two potential antecedents have been introduced in quick succession, as in (40a) below. This suggests that anaphoric definite descriptions are relativized only to the situation corresponding to the entire discourse context.

- (40) A woman_i entered from stage left. Another woman_j entered from stage right.
a. #The woman was carrying a basket of flowers. (Roberts 2002)

Furthermore, definite descriptions may not “zoom out” on the discourse context to include potentially forgotten individuals. Thus, (41) below is unacceptable. A definite description may only successfully refer to a potentially forgotten individual if the descriptive content is rich enough to enable the addressee to identify the unique referent without depending on an anaphoric link, as in (42).

(41) # Do you remember the man?

(42) Do you remember the man we met last night?

In chapter 2, we saw that definite and demonstrative descriptions are licensed by bridging inferences, or background assumptions about the contents of the domain of discourse. For example, the definite description *the horn* in (43) below is licensed by the inference that cars have (unique) horns. This background assumption ensures that the definite description refers uniquely relative to the discourse context, which contains a unique car.

(43) A car drove by. The horn was honking.

We also saw briefly that demonstrative descriptions are licensed by bridging inferences just when they have a contrastive interpretation, as shown below.

(44) Gentian jerked the plug out of the drain and climbed out of the tub.
[The cat] leapt into the sink and began biting at *that plug*.

Why must bridging demonstratives be contrastive? We have already seen that deictic and anaphoric demonstratives refer uniquely relative to a situation that is distinct from the discourse context. A contrastive interpretation ensures that a bridging demonstrative refers uniquely relative to a proper subpart of a domain. In the absence of an explicit contrast, a definite description would be licensed, and we will see below that when all else is equal, definite descriptions are preferred.

Putting together the deictic, anaphoric and bridging uses leads us to the following descriptive generalization about definite and demonstrative descriptions in extensional contexts:

- (45) *Descriptive generalization: Descriptions in extensional contexts*
- a. Definite descriptions refer uniquely relative to the situation corresponding to the discourse context.⁸
 - b. Demonstrative descriptions refer uniquely relative to a salient situation distinct from the discourse context.

Note that the descriptive generalization refers to the discourse context; when the discourse describes the physical surroundings of the utterance, the discourse context will correspond to the context of utterance. What makes a situation salient? The intuition here is that discourse participants can identify situations that they perceive to be independent eventualities or scenes in the physical surroundings or the described situation. For example, discourse participants can

⁸Barwise and Perry (1983) and Roberts (2002) also reach this conclusion.

identify the situation corresponding to a loud telephone conversation in (22), but not, say, the minimal situation containing the cell phone and the speaker's left foot. Situations, like individuals, are salient if they are physically salient or recently evoked. A more precise characterization of how people organize their perceptions of the world and what factors influence salience is a problem for philosophers and psychologists.

The descriptive generalization is exactly what the proposal in section 3.1.2 predicts for the distribution of definite and demonstrative descriptions in simple extensional sentences. The generalization about demonstrative descriptions follows from the assumptions that the situation corresponding to the discourse context is a default situation and that demonstrative descriptions must be relativized to non-default situations. The generalization about definite descriptions follows from assumptions about markedness relations. The definite article is less marked than the demonstrative determiner on my proposal, since it bears only one semantic feature. This sort of markedness relation is known to be exploited by speakers, and has been appealed to extensively in the literature on lexical blocking (see, e.g., McCawley 1977, Horn 1978), as well as in more recent work on pronoun interpretation (see, e.g., Sauerland 2003, Heim 2005). The basic principle that these researchers appeal to is that if a distinction *can* be marked, it *will* be marked. We therefore expect that if a definite noun phrase is felicitous in virtue of being interpreted relative to a non-default situation, the use of a non-default situation will be marked by a demonstrative determiner. As a result, definite descriptions will be relativized only to default situations, even though the lexical semantics of the definite article does not impose this

requirement. Furthermore, we expect that the less marked definite article will be preferred, all else being equal. That is, if a definite noun phrase is felicitous when interpreted relative to a default situation, it will be interpreted relative to that default situation and the definite article will be used.

However, this is not the only conceivable approach that can account for the data we have seen so far. Another possibility is to assume that there is no markedness relation between the definite article and the demonstrative determiners, and that the lexical semantics of *the* requires interpretation relative to a default situation. This approach and the proposal outlined in section 3.1.2 make different predictions about semantically unique descriptions and about a special emotive use of demonstratives. In the following two sections, I consider each of these cases in turn and argue that the facts are best accounted for by the analysis that appeals to a markedness relation.

3.2.2 Semantically unique descriptions, domain restriction, and markedness

By definition, semantically unique descriptions denote uniquely relative to a situation or world or they do not denote at all. Semantically unique descriptions that fail to denote relative to the world of evaluation give rise to presupposition failure, as illustrated by the old chestnut in (46) below.

(46) # The present king of France is wise.

In the descriptive generalization above, I claimed that definite descriptions in simple extensional sentences are relativized to a default situation which corresponds to the discourse context or described situation. Now, an obvious

consequence of the definition of semantically unique descriptions is that they will denote uniquely relative to the default situation or they will not denote at all relative to the default situation. What happens if a semantically unique definite description denotes relative to the world of the context but fails to denote relative to the discourse context?

- (47) My office contains four desks and a lot of bookshelves.
- a. # On one desk there is a letter from the present king of France.
 - b. On one desk there is a letter from the current president of the US.
 - c. On one desk there is a letter from the oldest resident of Santa Cruz.
 - d. On one desk there is a paper defending the idea that Norwegian syllable weight is sensitive to final lengthening.

Sentence (47a), containing a description that fails to denote relative to the world of the context, gives rise to presupposition failure as expected. Sentences (47b–d) contain descriptions that denote uniquely relative to the world of the context but presumably not relative to the situation corresponding to the discourse context. The current president of the US is physically distant from my office, but perhaps he is an element of the discourse context in virtue of being familiar to the discourse participants. On the other hand, the descriptions in (47c) and (47d) are not even familiar to the addressee due to common knowledge. These three sentences have a different status than (47a)—they are fully acceptable and easy to understand. If we only appeal to the descriptive generalization of the previous section, we incorrectly predict that (47b–d), like (47a), will give rise to presupposition failure. Clearly something must be changed.

One obvious possibility, following work on the familiarity theory of definiteness, is to appeal to accommodation: speakers are willing to accommodate the existence of a unique oldest resident of Santa Cruz and a unique idea with the content given in (47d), but they are not willing to accommodate the existence of a unique king of France because they know that France is a republic. This is plausible, but I take it as given that appeals to accommodation should be minimized, and as it happens it is not necessary to appeal to accommodation here.

Let's assume that a second default situation is available, corresponding to the world of the context, which, as we have already seen, is the maximal situation containing the situation that corresponds to the discourse context. Semantically unique definite descriptions are acceptable when they refer uniquely relative to this second default. We need to assume that the world of the discourse context is a default situation anyway, since main predicates can be interpreted relative to the world of the discourse context. The initial proposal thus correctly predicts the acceptability of semantically unique definite descriptions.

The remaining question is why demonstrative descriptions are normally incompatible with semantically unique content. This can be answered straightforwardly by appealing to the relative markedness relation between the definite article and the demonstrative determiners. In general, we expect less marked forms to be preferred. We have seen that semantically unique definite descriptions are guaranteed to be felicitous if the descriptive content can be used at all, because a semantically unique description that denotes at all is guaranteed to denote uniquely relative to the world of the context, a default situation. When

semantically unique descriptive content is used, the less marked definite article will normally be preferred over the more marked demonstrative determiner.

An account which did not take definite and demonstrative determiners to be in a markedness relation would have a much harder time accounting for the incompatibility of semantically unique content with demonstrative determiners. Suppose that the definite article had a feature [+default] requiring relativization to a default situation, and *that* had a feature [-default] requiring relativization to a non-default situation. Semantically unique content denotes uniquely in both default and non-default situations, so there would be no particular reason to choose one determiner over the other when using a semantically unique description.

The basic facts about the distribution of determiners with semantically unique content thus support the markedness-based account. There is one additional complication to account for concerning the distribution of semantically unique descriptive content. Demonstrative descriptions with an emotive reading, unlike ordinary demonstrative descriptions, are compatible with semantically unique descriptive content, and even with descriptive content consisting of a proper name, as shown below:

(48) That mother of John is quite a woman!

(49) That Mary Smith is quite a woman!

Let's now take a closer look at emotive demonstratives.

3.2.3 Emotive demonstratives

Lakoff (1974) observes that demonstrative descriptions have an emotive use, which she characterizes as expressing solidarity between the discourse partici-

pants. Thus, (50) below differs from (51) in conveying an emotive layer; (50) is something that might be uttered by a sympathetic nurse, while (51) is more neutral.

(50) How is that nose of yours?

(51) How is your nose?

Emotive demonstratives are exceptional in that their content can be semantically unique, as in (50), and can even consist of a proper name, as in (52–53) below:

(52) That Henry Kissinger is a really great guy!

(53) That Henry Kissinger is a real jerk!

This poses a challenge for the account developed above, under which it is unexpected for these descriptions (and names) to combine with a demonstrative determiner. Why can demonstrative determiners combine with semantically unique content in the emotive use but not in the neutral use? The answer that I will defend here is that it has something to do with the emotive meaning. Let's therefore begin by taking a closer look at what the emotive layer of meaning conveys.

It is perhaps already clear that, as Lakoff (1974) observes, the emotive layer of meaning does not convey any particular emotion towards the referent of the emotive demonstrative. Sentence (52) above conveys that the speaker has a positive feeling about Henry Kissinger, while (53) conveys that the speaker has a negative feeling about Kissinger. (It's fortunate that it is not necessary to characterize the emotion associated with the referent, as this emotion is sometimes extremely difficult to pin down—what emotion is felt about the addressee's nose in (50), for example?)

What the emotive use *does* convey is that the discourse participants share some relevant knowledge or emotion about the referent of the demonstrative. As a result, when the discourse participants do not share the requisite emotion or knowledge, the use of the emotive demonstrative breaks down.

When it is public knowledge that one of the discourse participants is unfamiliar with the referent of the emotive demonstrative, the emotive use is unacceptable:

- (54) A: Who is John Smith?
B: #That John Smith is a really great guy!

If A does not know John Smith, then clearly A and B cannot share any knowledge or emotion about him, so it is not surprising that the emotive use requires that the referent be familiar to all discourse participants.

Example (55) below, in which the participants do not share their opinion of the referent of the demonstrative, is marginal at best:

- (55) I know you can't stand John Smith, but I love him. #That John Smith is a really great guy!⁹

However, Chris Barker (p.c.) observes that examples of this type are improved when the emotive demonstrative is the first mention of the referent, as in (56):

- (56) I know you hate all politicians, but I kind of like that Rumsfeld guy.

This suggests that what is shared by the participants need not be an emotion, and raises the intriguing possibility (which I leave for future work) that emotive demonstratives might be subject to a discourse-novelty condition.

⁹This example might be acceptable to the extent that it's reasonable to suppose that the addressee is willing to overlook his or her own feelings and empathize with the speaker.

Finally, consider a situation in which the speaker assumes that an emotion is shared, but the addressee resists this assumption. In these circumstances an emotive demonstrative is acceptable, but feels intrusive or patronizing:¹⁰

- (57) Public radio announcer: Support public radio by sending in that check today!
- (58) Flight attendant: In preparation for landing, please fasten those seatbelts and make sure those tray tables are stowed.

The fact that these examples are acceptable but feel intrusive suggests that the emotive layer of meaning depends on the speaker's assumptions, not on mutually accepted information.

Based on these observations, I take the emotive layer of an emotive demonstrative to indicate that (the speaker assumes that) the discourse participants share some knowledge or emotion about the referent of the demonstrative. Since sharing knowledge or emotion is grounds for experiencing solidarity, this is consistent with Lakoff's (1974) original observation.

Now, knowing something about or experiencing an emotion towards some entity is a kind of situation. What I would like to suggest is that emotive demonstratives are relativized to non-default situations, even if their descriptive content denotes a singleton set relative to the model. The situation that an emotive demonstrative is relativized to contains the discourse participants, the referent of the demonstrative, and the state of experiencing the knowledge or emotion that the discourse participants share.

This kind of situation is obviously not a default. So we have a very straightforward explanation of why the emotive use is associated with demonstrative descriptions (rather than, say, definite or indefinite descriptions), as well as

¹⁰This observation is due to Barbara Partee (p.c.).

why emotive demonstratives are acceptable with semantically unique content. Emotive demonstratives require a demonstrative determiner because their descriptive content is relativized to a non-default situation and the use of a non-default situation must be marked. Emotive demonstratives are compatible with semantically unique content because a non-default situation is required in order to express the emotive layer of meaning; this overrides the preference for relativization to a default situation and thus for the use of a definite article.

There is no guarantee that every language will have emotive demonstratives—we shouldn't take it for granted that every language will have a convention associating a situation of shared knowledge or emotion and a particular determiner. However, if a language *does* have emotive DPs of this sort, it is expected that a marked definite determiner—i.e. a demonstrative—will be used to express the emotive meaning.

The analysis of the meanings of definite and demonstrative determiners that relies on markedness considerations, then, correctly predicts the distribution of semantically unique descriptions, including the distribution of emotive demonstrative descriptions. Before considering descriptions in intensional and quantificational environments, I turn briefly to two additional complications in the interpretation of definite and demonstrative descriptions in simple extensional sentences.

3.2.4 Aside on French deictic descriptions

Above, I noted that deictic definite and demonstrative descriptions are interchangeable in English when there is a unique potential antecedent in the context

of utterance, and attributed this fact to indeterminacy in what elements of the context of utterance are considered to be included in the discourse context. The distribution of French deictic descriptions presents an apparent challenge for this approach. In French, definite descriptions ordinarily resist a deictic interpretation; a demonstrative description is strongly preferred, as shown below. Given that French *le* and *ce* are otherwise quite similar to English *the* and *that*, respectively, this is surprising. Is it possible to extend the account to French determiners? In doing so, do we need to adjust the meaning of the definite article in French?

- (59) [We enter a village and head to the town square, where we find a baobab tree. A monkey is sitting in the baobab tree.]
- a. #Le singe te regarde d' un drôle œil.
the monkey refl-2sg look-at-3sg of a funny eye
 - b. Ce singe te regarde d' un drôle œil.
that monkey refl-2sg look-at-3sg of a funny eye
- 'That monkey is giving you a funny look.'(Tasmowski-De Ryck 1990: ex. (6))

Robinson (2005) argues that the definite articles in French and English indeed have different meanings. Her argument is based in part on the observation that French definite descriptions resist deictic interpretations.¹¹ According to Robinson, the English definite article carries a familiarity presupposition that allows it to take a deictic interpretation, while the French definite article lacks a familiarity presupposition and as a result cannot have a (directly) deictic interpretation. What I would like to suggest, admittedly in a sketchy way, is that the contrast between English and French illustrated above might instead

¹¹Robinson (2005) also considers the generic interpretation of French definite descriptions, a topic which is beyond the scope of this dissertation. See de Swart and Farkas (2006) for further discussion of the expression of genericity in English and French.

arise from a difference in the interplay of markedness considerations. If such an account can be maintained, then we need not give up on a unified account of the meaning of the definite article in French and English.

Deictic definite descriptions are not universally banned in French. A number of factors make deictic definite descriptions more acceptable, including apparent reliance on bridging inferences, as shown in (60); pitch accents, as shown in (61); topicalization, as shown in (62); and modification, as shown in (63).¹²

(60) [at a soccer match]

L' arbitre a donné le coup d'envoi.
 the referee have-3sg give-past the kick of sending

‘The referee just signaled kick-off.’

(61) [a bowl on the table contains various fruits]

[Les pommes]_F sont magnifiques!
 the apples are magnificent

‘[The apples]_F are magnificent!’

(62) Elle est magnifique, la pomme.

she is magnificent the apple

‘It’s magnificent, the apple.’

(63) [in a crowded restaurant; a man is talking loudly on his cellphone]

L' homme avec un/le radiotéléphone m' ennuie
 the man with a/the cellphone REFL-1sg annoy-3sg
 beaucoup.
 a lot

‘The man with a/the cellphone is really annoying.’(Robinson 2005:84)

In order to maintain the claim that the French definite article does not allow a deictic interpretation, these examples must be analyzed as something other than deictic, even though the definite descriptions appear to refer to elements

¹²An open empirical question here is what sorts of modifiers license the deictic use of definite descriptions in French.

of the physical surroundings of the utterance. Tasmowski-De Ryck (1990) and Robinson (2005) take on this challenge and suggest that the French definite determiner refers successfully in virtue of establishing a functional dependency between the referent and some other entity.

Is this necessary? The speaker of (59a) above, referring to the monkey in the town square, depends on the addressee having previously noticed the monkey. It's not hard to imagine that the addressee might have overlooked the monkey. In (60), by contrast, successful reference to the referee of the soccer match depends only on the addressee having noticed that he or she is at a soccer match, something that is hard to overlook. Topic-focus articulation, as in (61–62), and additional descriptive content, as in (63), arguably provide cues that support the addressee's identification of the referent of the definite description. Taking the full set of data into account, it begins to appear that French speakers are merely more cautious than English speakers in the assumptions they make about what is in the context of utterance. But is that a difference that can be incorporated into a linguistic analysis?

I would like to suggest that the key is markedness considerations. I have claimed that demonstrative descriptions are more marked than definite descriptions and that certain facts about the distribution of English definite and demonstrative descriptions follow from the principle that less marked forms are in general preferred. On the other hand, I have argued that when a distinction *can* be marked, it should be marked: that is, when a domain shift is required, it should be marked by a use of a demonstrative. Deictic descriptions that refer uniquely in the context of utterance are an interesting case because they

involve some tension between these two principles of markedness. On the one hand, if the speaker assumes that the addressee has noticed the same elements of the physical context that the speaker has, then a domain shift is not required, and according to the first principle the less marked definite description is preferred. On the other hand, the use of a definite description in this circumstance requires a leap of faith that the addressee and speaker have noticed the same things, a leap of faith that may not be warranted. The difference between English and French, then, might arise from a difference in the interplay of the two markedness principles: English appears to value the use of less marked forms, even at the price of dangerous assumptions about the participants' mutual knowledge, while French appears to value the use of marked forms to mark available distinctions, even at the price of more frequent use of marked forms.

3.2.5 Scene shifts and temporal shifts

The described situation does not always encompass all of the previous discourse—the situation being described can shift. Particularly clear examples of this sort of shift can be found in Hemingway's story "A Clean Well-Lighted Place."¹³ The story concerns two waiters and two non-waiters (a customer and a barman). There are several scenes consisting of conversations between two characters. When the story focuses on one waiter interacting with a non-waiter, the definite description *the waiter* is used, as shown in the excerpt below:

- (64) The old man sitting in the shadow rapped on his saucer with his glass.
The younger waiter went over to him.
'What do you want?'

¹³The use of definite descriptions in this story has previously been analyzed by von Heusinger (2003).

The old man looked at him. ‘Another brandy,’ he said.
‘You’ll be drunk,’ *the waiter* said.

On the other hand, when the story focuses on interactions between the two waiters, the definite description *the waiter* is never used. Instead, the descriptive content is rich enough to distinguish between the two waiters, even when readers could in principle infer from the context which waiter is being referred to:

- (65) ‘I am one of those who like to stay late at the café,’ *the older waiter* said. ‘With all those who do not want to go to bed. With all those who need a light for the night.’
‘I want to go home and into bed.’
‘We are of two different kinds,’ *the older waiter* said.

Once we recognize that different conversations are treated as distinct situations in this story, the use of the definite descriptions is exactly what we’d expect, given the situation-based account. The descriptive content denotes uniquely relative to the situation currently being described; when the current situation contains a single waiter, the description *the waiter* is felicitous, and when the current situation contains more than one waiter, more detailed descriptive content is necessary.

Determining what counts as a shift in described situation is a matter for pragmatics—it depends heavily on real-world knowledge and contextual factors. A complete account of this effect will most likely rely on discourse relations between chunks of text (see Asher 1993). Note that the discourse in (40), repeated below, is most naturally taken as a description of a single situation because there is an organizing activity—the discourse describes the action in a play—and the events take place in a single location and time interval. However, with additional contextual support, it is possible for the same sequence of events

to be treated as two distinct situations, each corresponding to one entrance. If this interpretation is supported, as shown in (66) the definite description *the woman* is more acceptable, referring to the woman involved in the second situation¹⁴:

- (40) A woman_{*i*} entered from stage left. Another woman_{*j*} entered from stage right. #*The woman* was carrying a basket of flowers.
- (66) A woman_{*i*} entered from stage left. She_{*i*} entered quietly and didn't look at the audience. Then another woman_{*j*} entered from stage right. This was a completely different affair. *The woman_{*j*}* was singing, dancing and tossing flowers to the audience.

The examples in (67–68), due to work by Enç (1981) and Musan (1995) on the temporal interpretation of nominals, involve a different kind of shift.

- (67) Yesterday two people played chess. Today they played again. The winner lost.
- (68) The fugitives are now in jail.

Intuitively, the temporal locations of the nominal predicates and the main predicates in these examples are distinct: the last sentence in (67) is consistent only if it is interpreted as a claim that yesterday's winner lost today, and the most plausible interpretation of (68) is that the people who used to be on the run are now in jail.

Musan (1995) speculates that temporal and modal anchoring work in tandem. Situations, after all, have spatiotemporal locations, so the temporal parameter of a predicate could in principle be derived from the situation relative to which the predicate is interpreted. The appeal of this move is in its elegance: predicates end up with just one interpretive parameter, and that parameter does a lot of work.

¹⁴Some speakers find (40) acceptable, suggesting that even this minimal discourse can be interpreted as consisting of more than one discourse segment.

However, conflating the modal and temporal parameters of predicates in this way creates problems for the account of definite determiners that has been developed so far. Consider the temporal location of the default situation corresponding to the discourse context relative to which the last sentence of (67) is interpreted. Presumably it contains the interval during which the main predicate *lost* holds. But we have seen that the predicate *winner* must be interpreted at a different temporal location. So deriving temporal location from the modal parameter conflicts with the proposal that definite descriptions are interpreted relative to a default situation. Perhaps further research on the temporal anchoring of nominals will find a way to resolve this conflict, but for now I conclude that modal and temporal anchoring must be kept distinct.

3.2.6 Interim summary

So far we have seen that the proposed analysis of definite and demonstrative determiner meanings correctly predicts the distribution of definite and demonstrative descriptions in simple extensional sentences. I have argued that due to markedness considerations, definite descriptions are consistently analyzed relative to default situations corresponding to the discourse context or world of the context, while demonstrative determiners require interpretation relative to other situations. The analysis accounts for deictic uses traditionally analyzed in terms of speaker demonstrations or referential intentions, as well as for anaphoric, bridging, semantically unique and emotive uses that are not considered in classic accounts of demonstratives. I have also argued that apparent challenges from context shifts and from differences between English and French

do not require the analysis to be revised. The next step is to consider how the analysis treats quantificational and intensional sentences. This will require us to consider more complicated examples and different kinds of default situations.

3.3 Constraints on domain restriction in intensional contexts

The definite descriptions in (69–70) can have *opaque* interpretations:

(69) The president of the US in 2005 could have been from Massachusetts.

(70) John believes that the intelligent designer of the universe is kind.

The opaque reading of (69) claims that there is an accessible situation (or world) in which the US president in 2005 in that situation is from Massachusetts; one circumstance making the sentence true is the existence of an accessible situation in which Kerry wins the 2004 election. The transparent reading of (69), in which the definite description is interpreted relative to the actual world, is a claim that George W. Bush could have been from Massachusetts. The opaque reading of (70) requires each of John’s belief situations to contain a unique intelligent designer of the universe; we can accept the opaque reading, but not the transparent reading, without making assumptions about the theological beliefs of the discourse participants.

The analysis of the section above predicts semantically unique descriptions such as *president of the US in 2005* to be relativized to the world of the context; this will derive the transparent reading. In order to derive the opaque reading as well, we need to allow definite descriptions to be relativized to bound situation

variables. This is just what the default/non-default distinction laid out in section 3.1.2 predicts.

In chapter 2, we saw that definite and demonstrative descriptions with opaque antecedents have opaque readings. Relevant examples are repeated below.

- (71) a. Scott will pick a number. That number Scott picks could be odd.
b. Scott will pick a number. The number Scott picks could be odd.
(King 2001)
- (72) a. Mary believes that a unicorn is in her garden. She believes that unicorn is ruining her lawn.
b. Mary believes that a unicorn is in her garden. She believes the unicorn is ruining her lawn.

Earlier we also saw that when there are two salient potential antecedents, an anaphoric demonstrative is acceptable, referring to the most recently mentioned antecedent, while an anaphoric definite is unacceptable. The same is true in intensional contexts. In (73) below, two antecedents are introduced in the scope of *believe*. The anaphoric demonstrative in (73a) is acceptable, and the anaphoric definite in (73b) is not.

- (73) Mary believes that a unicorn_{*i*} is in her front garden. She also believes that a unicorn_{*j*} is in her back yard.
a. She believes that that unicorn_{*j*} is ruining her lawn.
b. *She believes that the unicorn is ruining her lawn.

The descriptive generalizations about the distribution of opaque anaphoric descriptions are parallel to the descriptive generalizations about the distribution of anaphoric descriptions in purely extensional environments. In both cases, anaphoric definite descriptions require uniqueness relative to a domain, while anaphoric demonstratives require uniqueness relative to a subpart of the

domain established by the recent introduction of an antecedent. The difference is what constitutes the relevant domain. In purely extensional contexts, the domain is the domain of the discourse context. In opaque environments, the relevant domain is the domain that has been established by previous context in the situations being quantified over. In (73a–b), for example, the relevant domain is the publicly established contents of Mary’s belief situations, which includes two unicorns.

The distribution of bridging definite and demonstrative descriptions in intensional contexts also mirrors the distribution of bridging descriptions in extensional contexts. Recall that bridging definite descriptions are licensed by inferences entailing their uniqueness relative to the discourse context, such as the inference in (74) that the car that drove by has a unique horn.

(74) A car drove by. *The horn* was honking.

Likewise, opaque bridging definite descriptions are licensed by inferences entailing their uniqueness with respect to the domain that has been established by previous context in the situations being quantified over. For example, the first sentence in (75) below introduces a car in each of Mary’s belief situations; the inference that each of these cars has a unique horn licenses the opaque definite description *the horn* in the second sentence.

(75) Mary believes that a car is parked outside. She believes that *the horn* is honking. (Actually she is hearing a child playing with a toy horn.)

Recall also that bridging demonstrative descriptions are licensed by inferences entailing their uniqueness relative to a proper subpart of the discourse context, as in (76).

(76) A car drove by. The horn was honking. Then another car drove by. *That horn* was honking even louder.

The same is true of demonstrative descriptions in intensional contexts. Opaque bridging demonstrative descriptions are licensed by inferences entailing uniqueness relative to a proper subpart of the domain that has been established by previous context in the situations being quantified over. For example, in (77) below the first three sentences introduce two cars in each of Mary's belief situations. The demonstrative description *that horn* in the final sentence is an opaque bridging demonstrative; its descriptive content refers uniquely with respect to the subpart of Mary's belief situations containing the car that was mentioned second, but not with respect to the entire domain that has been explicitly established in each of Mary's belief situations.

- (77) Mary believes that a car is parked outside.
She believes that the horn is honking.
She also believes that another car is parked down the block.
And she thinks that *that horn* is honking even louder.

The fact that the referent of *that horn* is contrasted with another horn in the belief situations ensures that the demonstrative description must be relativized to a proper subpart of the established domain. This is important because, as we saw for the purely extensional cases, definite descriptions (which are less marked) are preferred to demonstrative descriptions when they can be used. In the absence of an explicit contrast, a bridging definite description will be possible and a bridging demonstrative will be ruled out.

Let's look at one more example of opaque bridging descriptions. Suppose that Mary is pulling scarves at random out of a drawer that contains red, blue and yellow scarves.

- (78) Mary actually pulled a red scarf out of the drawer, but the/*that scarf could have been blue.

The definite and demonstrative descriptions in (78) are both acceptable on the transparent reading, which claims that the red scarf that Mary actually pulled out could have been dyed blue. This is a straightforward anaphoric interpretation. Of greater interest here is the opaque reading of the description, which in effect results in a claim that Mary could have pulled out a blue scarf instead of the red scarf that she actually took. This reading is available for the definite description but not for the demonstrative description, a pattern that is expected given what we have seen so far. Notice that the opaque interpretation of *the scarf* is not anaphoric: its referent (relative to any given metaphysically accessible situation) is distinct from the referent of *a red scarf*. Nor is the definite description semantically unique, of course. Instead, the definite description is licensed by the bridging inference that Mary pulled exactly one scarf out of the drawer in each of the situations in the modal base of *could*. It's not particularly surprising to find a bridging inference affecting the modal base in this way—the modal base must satisfy the presuppositions of the complement of the modal, and on the opaque interpretation of *the scarf*, the complement presupposes that *scarf* denotes uniquely relative to the situations that *could* quantifies over.

The unacceptability of *that scarf* in (78) is also expected: because a (less marked) bridging definite is possible, a (more marked) bridging demonstrative is dispreferred. Furthermore, we should be able to make the opaque demonstrative acceptable by adding an explicit contrast, and indeed we can:

- (79) First Mary pulled a red scarf out of the drawer. Then she pulled out a blue scarf. *That scarf* could have been red too.

We saw at the beginning of the chapter that main predicates in intensional contexts are interpreted relative to a bound situation variable that varies either

over a set of small situations verifying the information that has been established about an intensional context or a set of maximal situations, i.e. worlds. Here we have seen that opaque definite descriptions are consistently interpreted relative to these situations, just as we'd expect, while opaque demonstrative descriptions are interpreted relative to other salient situations. Next, let's consider whether the analysis makes the correct predictions about the distribution of definite and demonstrative descriptions in quantificational sentences.

3.3.1 Quantification and situations

In the previous chapter we saw that semantically unique definite descriptions containing bound variable pronouns can take narrow scope under nominal quantifiers. Relevant examples are repeated below:

(80) Every girl_{*i*} finished the book she_{*i*} liked best.

(81) No girl_{*i*} finished the book she_{*i*} liked least.

This is unsurprising: once the value of the bound variable pronoun is fixed, the description is guaranteed to denote uniquely relative to the discourse context, and we expect the definite description to be licensed. Also as expected, semantically unique demonstrative descriptions containing bound variable pronouns tend to be unacceptable unless they have an emotive interpretation. Thus, (82) below is acceptable only under an emotive interpretation, for example, one suggesting that the discourse participants are familiar with the feeling shared by authors toward their first books:

(82) Every author_{*i*} is fondest of that first book of his_{*i*}.¹⁵

¹⁵See King (2001) for similar examples, though King does not claim that these examples are emotive.

A complicating factor here is that bound variable pronouns tend to occur in postnominal modifiers, and postnominal modifiers license additional readings of demonstrative descriptions. These additional readings are the subject of chapter 4, and I therefore disregard them here.

We also saw that anaphoric definite and demonstrative descriptions take narrow scope under nominal quantifiers when their antecedents also take narrow scope. Relevant examples are repeated below.

- (83) Every dog_{*i*} in the neighborhood, even the meanest, has an owner who thinks the/that dog_{*i*} is a sweetie. (Roberts 2003)
- (84) Everyone who bought a sageplant_{*i*} bought eight others beside the/that sageplant_{*i*}. (Heim 1990, Abbott 2002)

The same is true of adverbial quantification. Anaphoric demonstrative and definite descriptions take narrow scope under adverbial quantifiers and under free relatives that explicitly quantify over situations when their antecedents also have narrow scope under these operators:

- (85) Whenever I see a child_{*i*} on the train, the/that child_{*i*} is reading a book.
- (86) A farmer and a donkey_{*i*} often disagree about the donkey's_{*i*} best interests.

Definite descriptions with narrow scope under nominal quantifiers are also licensed by bridging inferences:

- (87) Every house has a leak in the roof.
- (88) Every car in the parking lot has a crack in the windshield.

In (87), the definite description *the roof* covaries with houses and is licensed by the inference that houses have unique roofs.

Bridging definite descriptions can also take narrow scope under adverbial quantifiers and free relatives that explicitly quantify over situations:

- (89) A well-maintained car seldom has a crack in the windshield.
(90) Whenever it rained in Santa Cruz, the clouds were black.

We have seen that demonstrative descriptions are licensed by bridging inferences in contrastive contexts. The same is true of bridging demonstrative descriptions that take narrow scope under nominal and adverbial quantifiers, as illustrated below.

- (91) The girls received individualized reading lists with sections labeled ‘on reserve’ and ‘in bookstore.’ Every girl went to the reserve section of the library and read *those books* first. (Donka Farkas, p.c.)
(92) Whenever a building inspector finds a cracked window downstairs, he goes upstairs and inspects *those windows* carefully.

In (91), *those books* refers to the books on the given girl’s reading list that are in the reserve section, and is licensed by inferences having to do with expectations about the behavior of people with reading lists and by the contrast with the books in the ‘in bookstore’ section of the list. Notice that the books referred to by the demonstrative description covary with girls (and their reading lists): the demonstrative description has narrow scope under the universal quantifier. In (92), the referent of *those windows* covaries with situations of building inspectors finding cracked windows downstairs, and is licensed by the inference that upstairs floors of buildings have windows and by the contrast between upstairs windows and downstairs windows; the sentence also depends on the assumption that all of the relevant buildings have more than one story.

In a way, we’re seeing the all same facts for a third time. Sentences involving nominal and adverbial quantification have shown us once again that definite descriptions are licensed when they denote uniquely relative to a domain, which can be accomplished by semantic uniqueness, dependency on a

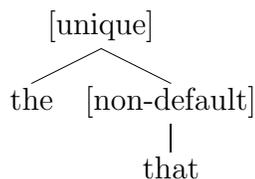
unique antecedent, or an appropriate bridging inference. We have also seen once again that demonstrative descriptions are licensed by denoting uniquely relative to a subpart of a domain, which can be accomplished by an emotive interpretation, by “zooming in” on a recently introduced antecedent, or by an appropriate bridging inference combined with a contrastive interpretation.

On the other hand, we seem to be faced with yet another set of relevant domains—not those corresponding to the context of utterance or an intensional context, but those introduced by quantifiers. Or are we? Adverbial quantifiers have been analyzed as quantifying over situations (Lewis 1973, Berman 1987, Heim 1990, von Stechow 1994). When a description takes narrow scope under an adverbial quantifier, then, it is interpreted relative to a bound situation variable; descriptions that take narrow scope under adverbial quantifiers can be treated exactly like opaque descriptions. Furthermore, Kratzer (1989) argues that nominal quantification also introduces quantification over situations.

In short, the existing analysis makes the correct predictions about the distribution of definite and demonstrative descriptions in quantificational sentences. No revision of the analysis of determiner meanings is necessary, as long as we assume that nominal and adverbial quantification both introduce quantification over situations.

The analysis of *the* and *that* is summarized below.

(93)



(94) $\llbracket the_n \rrbracket$: $\lambda\mathcal{P}.P(s_n)$ is a singleton set.
 If defined, denotes $\iota x.\mathcal{P}(x)(s_n)$

- (95) $\llbracket that_n \rrbracket$: $\lambda\mathcal{P}.P(s_n)$ is a singleton set and s_n is non-default.
 If defined, denotes $\iota x.\mathcal{P}(x)(s_n)$
- (96) Given a sentence A, a situation variable s is a *default situation* just in case it is bound in A. Otherwise s is a *non-default* situation.

The next section completes the analysis by adding an account of the proximal demonstrative *this*.

3.4 Marked demonstratives

In traditional grammars, the English demonstrative determiners are said to indicate the distance of the referent from the speaker: *this* requires the referent to be close to the speaker and *that* requires the referent to be far away from the speaker. This accounts for the contrasts in (97–98) below:

- (97) [holding a book] I like this/*that book.
 (98) [pointing at a painting across the room] I like *this/that painting.

I will take a somewhat different approach. While *this* will indeed indicate proximity in the analysis developed here, I will take *that* to be unmarked for distance from the speaker.¹⁶ There are at least two initial reasons to think that this is plausible. One is that when the distance of the referent from the speaker is irrelevant, the determiner *that* is used. For example, if we are in a room containing only one painting, (99) is acceptable even if the speaker is quite close to the painting.

- (99) [pointing at the only painting in the room] I like that painting.

The second reason it is initially plausible to take *that* to be unmarked for distance is that historically *that* was the medial or unmarked member of a three-way demonstrative system consisting of *this*, *that* and *yon*; an analysis in which

¹⁶Lyons (1977) also takes this position about the English demonstrative system.

that is unmarked for distance suggests, reasonably, that the demonstrative system of modern English developed by losing the distal demonstrative and undergoing no other changes.

A satisfactory account of *this* and *that* needs to answer two questions. The first has to do with the distribution of the two determiners: why is it that in some contexts, such as (97), just one of the two determiners is allowed, while in others, such as (99), either demonstrative determiner is acceptable? The second question has to do with the meaning of the proximal demonstrative: the concept of proximity is intuitively clear in deictic uses, but what condition does the determiner impose on non-deictic uses?

With regard to the first question, I will argue that straightforward reasoning about the relative markedness of the two demonstrative determiners, parallel to reasoning about the relative markedness of demonstrative determiners and the definite article, correctly predicts their distribution. The second question has already been addressed in the literature, notably by Fillmore (1997). Fillmore and others have argued that “proximity” is extended metaphorically into domains other than the physical surroundings of the utterance, and I show below how this can be incorporated into the present analysis.

We saw in (97) above that the determiner *this* is required in a demonstrative description when the referent is very proximal to the speaker. The determiners *this* and *that* also fail to be interchangeable when the speaker relies on a contrast in distance to fix the reference of two demonstrative descriptions with the same descriptive content, as shown below.

- (100) [B is holding *Gaudy Night*, and *Have His Carcase* is across the room]
A: How you like Dorothy Sayers?

B: I like this novel better than that novel.
(=I like *Gaudy Night* better than *Have His Carcase*.)

In these two contexts, the proximity of the intended referent to the speaker is crucial to fixing the reference of the demonstratives: demonstrating a referent by holding it up guarantees that the speaker is close to the referent, and the interpretation of (100) hinges on a contrast in proximity. This suggests that when proximity is important, it should be formally marked, that is, the determiner contributing a proximity condition should be used. That is hardly surprising. In fact, we can make the simpler and stronger requirement that when the intended referent is proximal to the speaker, proximity must be marked. Although the determiner *that* is unmarked, this principle will exclude its use in (97) and the first demonstrative description in (100), just as definite descriptions are excluded in contexts requiring relativization to a non-default situation.

Now we need to say something about contexts such as (101) below, in which either demonstrative determiner is acceptable. Given my suggestion that proximity is *always* marked, we might not expect to find this optionality.

(101) [Pointing at a painting, medium distance from speaker]
I like this/that painting.

What this example shows us is that it is not always fully determinate whether a particular entity is close enough to the speaker to require the proximal demonstrative. In indeterminate cases, the speaker must make a judgment call. By using *this*, the speaker presumes that the intended referent is identifiable in virtue of its proximity. By using *that*, the speaker presumes that the intended referent is identifiable without reference to its distance from the

speaker. This is reminiscent of deictic uses of descriptions in which either a definite or a demonstrative determiner is acceptable, due to indeterminacy in the contents of the situation corresponding to the context of utterance.

So far we have seen that a proximity condition is useful in explaining the distribution of deictic uses of demonstrative descriptions. The remaining task is to extend the proximity condition to non-deictic uses. Fortunately, most of the work required for this task has already been done. Let's review what has already been established in the literature.

First, *this* has a cataphoric or backwards anaphoric use, picking out a referent which is only subsequently introduced into the context. For example, in (102–103) below, *this NP* refers to an individual that the speaker introduces into the physical context subsequently to the use of the demonstrative. In (104), *this idea* refers to a subsequent part of the speaker's utterance. And in (105), the group referent of *these candidates* is named by a subsequent list. Notice also that in (103), the proximal demonstrative is required even though the referent is physically distant from the speaker—cataphoricity is the crucial factor.

- (102) I bought this/*that book today. [speaker reveals a book]
(103) [in an auditorium with the curtains down; speaker is distant from the stage]
We have chosen this/*that actress to play the lead role.
[curtains open to reveal an actress]
(104) The observations suggest this/*that idea: that the climate is changing.
(105) There are still these candidates to interview: Lugton, Barnes, Airey, and Foster. (Huddleston and Pullum 2001:1509)

Fillmore (1997) observes that when a backwards anaphoric demonstrative is uttered, the speaker knows what the referent is but the hearer does not.

Furthermore, the introduction or identification of the referent is performed by the speaker in these cases. Backwards anaphoric *this* can perhaps be seen as involving proximity to the speaker in virtue of the speaker controlling the introduction or identification of the referent.

Second, Gundel et al. (1993) observe that the referent of *this+NP* must be “speaker-activated.” That is, when *this* is anaphoric, the discourse referent associated with the demonstrative must have been previously introduced by the speaker.

- (106) A: Have you seen the neighbor’s dog?
B: Yes, and ??*this/that* dog kept me awake all night.
- (107) The neighbors have a dog and *this/that* dog kept me awake all night.

Speaker-activation is conceivably another interpretation of proximity to the speaker in the linguistic context.

Third, English has a special indefinite use of *this*, which has been described by Prince (1981). Prince shows that indefinite-*this* noun phrases are wide-scope indefinites that have a tendency to be referred to again in subsequent discourse.

- (108) One time I went to the roof of this project and there’s *this big black guy about six seven* on top of the stairs. He had his back to me. . . (Prince 1981:ex. (9b))

An indefinite use of a demonstrative determiner is quite rare.¹⁷ However, it is not difficult to understand as a further extension of the situation Fillmore describes, in which the speaker but not the addressee knows what the demonstrative refers to. The special feature of indefinite *this* is that rather than

¹⁷Diessel (1999:139) finds just one other instance of a specific indefinite demonstrative, in Urim, but Urim uses a distal demonstrative accompanied by an indefinite article for this function.

immediately identifying the referent, the speaker instead chooses to give more information about it.

Finally, *this NP* has a discourse deictic use, discussed by Roberts (2002), in which the referent is a recently introduced syntactic or semantic constituent of the text itself. The discourse-deictic use is illustrated in below, and numerous additional examples can be observed in the text of this dissertation.

(109) This sentence is short. (Roberts 2002)

(110) John thinks that if you take your umbrella, it won't rain. This belief is mere superstition.

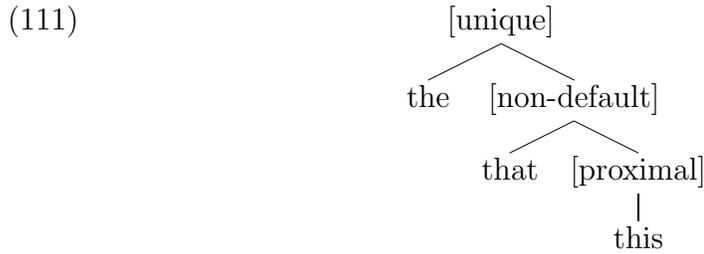
As Roberts points out, the discourse deictic use can be understood as involving a transfer of the notion of proximity onto the text of the discourse, where proximity can easily be related to the temporal ordering of the text. This explains why discourse deictic *this NP* must pick up on a recently uttered constituent of the text.

The notion of proximity relevant to the discourse deictic use can perhaps be applied to the cataphoric demonstratives. Since the referent of a cataphoric demonstrative is introduced shortly after the utterance of the demonstrative, the introduction of the referent is temporally proximal to the utterance of the demonstrative. Temporal proximity to the utterance of a demonstrative is also clearly relevant to French and German proximal and distal demonstratives, which have a function corresponding to English *the latter* and *the former* respectively (Fillmore 1997).

However, the speaker-activation facts and indefinite *this* suggest that some uses of English *this NP* are subject to a different extension of the notion of proximity. These uses do not require temporal proximity between the utter-

ance of the demonstrative and the introduction of the referent; in fact the actual referent of indefinite *this* need not be introduced to the addressees at all. The reinterpretation of proximity that appears to be crucial here is speaker control over the identification of the referent. The intuition is, I hope, clear enough. It is compatible with a variety of approaches, and the implementation will depend on the rest of the account. Roberts's (2002) analysis, which relies on conditions on discourse referents, could accommodate the intuition by keeping a record of which discourse participants are responsible for introducing which discourse referents. The intuition can be accommodated in the present account by assuming that proximal demonstratives can be relativized to situations in which the speaker is acquainted with the intended referent. An interpreter who is willing to accept such a situation will not necessarily be able to identify the intended referent in the real world—at the utterance of a cataphoric demonstrative, “real” reference has not been achieved. However, the interpreter will have established a uniquely identifiable discourse referent which can subsequently be linked to an entity in the real world.

To summarize, in this section we have seen that the determiner *this* is subject to a proximity condition, while the determiner *that* is unmarked for location. Previously we saw that both demonstrative determiners indicate that their descriptive content denotes uniquely relative to a non-default situation, while the definite article merely indicates that its descriptive content denotes uniquely relative to a situation. This gives us the markedness hierarchy illustrated below. The most marked determiner bears all three presupposition-triggering semantic features, while the definite article bears only one.



(112) [unique]: The NP complement denotes a singleton set relative to its situation parameter.

(113) [non-default]: The NP complement is relativized to a non-default situation.

(114) [proximal]: The semantic value of the DP is proximal to the speaker.

(115) $\llbracket this_n \rrbracket$: $\lambda\mathcal{P}.\mathcal{P}(s_n)$ is a singleton set and s_n is non-default and $\iota x.\mathcal{P}(x)(s_n)$ is proximal to the speaker
 If defined, denotes $\iota x.\mathcal{P}(x)(s_n)$

3.5 Conclusion

In this chapter I have developed a uniqueness-based account of the semantics of definite and demonstrative determiners. Following the results of the previous chapter, I have taken definite and demonstrative determiners to be of type $\langle et, e \rangle$ and assumed that their descriptive content interacts with the rest of the compositional semantics. I have argued that the semantic common denominator of definiteness is relativized uniqueness, so that definite and demonstrative determiners all presuppose that their descriptive content denotes uniquely relative to a situation. In addition, I have argued that the semantic common denominator of demonstrative determiners is a presupposition that the descriptive content is interpreted relative to a non-default situation, or situation variable whose value is distinct from the values of situation variables

associated with main predicates. Finally, I have argued that the proximal demonstrative determiner additionally requires that the referent is proximal to the speaker. The account thus establishes a markedness hierarchy among the definite determiners, with the definite article being least marked and the proximal demonstrative determiner being most marked. The markedness relation affects the distribution of definite and demonstrative determiners in two ways: if a description is relativized to a non-default situation or depends on proximity to the speaker, it is marked as such, and all else being equal, less marked forms are preferred.

The analysis presented in this chapter has broader empirical coverage than previous accounts of the semantics of demonstrative descriptions, providing a unified account of deictic, anaphoric, bridging, descriptive and emotive uses of definite and demonstrative descriptions. It also provides new support for uniqueness-based treatments of definiteness, which until now have focused nearly exclusively on definite descriptions.

The next chapter extends the account of definite and demonstrative determiners presented here to special attributive and opaque readings of demonstrative descriptions that are licensed by postnominal modifiers.

Chapter 4

Postnominal Modifiers and the Modal Anchoring of Demonstratives

4.1 Introduction

In formal registers of English, there is a special use of demonstrative descriptions which behaves quite differently from more canonical demonstratives. One striking feature of this use is that it can appear discourse-initially, without deixis or an anaphoric interpretation, and it does not imply that any of the discourse participants can identify the referent. King (2001), observing this, dubs examples like (1) below the “no demonstration, no speaker intention” (NDNS) use.

- (1) That student who scored one hundred on the exam is a genius. (King 2001:3)

With the notable exception of King (2001), this type of demonstrative description has received little attention in the literature. One possible reason for this neglect is that some examples seem overly formal, even stilted, suggesting that the construction should not be given equal status with more familiar uses of demonstratives. Jespersen certainly seems to hold this opinion about a related construction, in which a demonstrative pronoun is modified by a relative clause:

Though examples of anaphoric *that* followed by *which* are by no means rare, they are now felt to be somewhat stiff and in some cases even un-English. In such a sentence as “Have you seen my knife — I mean that which I bought yesterday, not the old one,” the only natural expression is “the one I bought.” (Jespersen 1954:408)

While it is true that some constructed examples of the special use sound awkward, this type of demonstrative description is in fact rather widespread. In particular, it is quite natural with a plural or mass head noun; a few attested examples are shown below.

- (2) At what point exactly does fact drift over into fiction? The book is so seamlessly written that perhaps not even *those people who own upstairs and downstairs copies of the Warren report* could say for certain.¹
- (3) The Ig Nobel Prizes don’t honor necessarily the best or the worst. They honor some of *those people who otherwise would never get anything*.²
- (4) This book’s message is simple: *those Chinese with lofty dreams* should focus on the nitty-gritty first.³
- (5) ... we may jettison *that aspect of of Donnellan’s theory which claims that speaker intentions supercede descriptive content in determining reference on the referential use*, while retaining the essence of his distinction. (Abbott 2000:3)

¹Anne Tyler, “Dallas, echoing down the decades,” *New York Times*, July 24, 1988.

²Marc Abrahams, quoted in James Glanz, “Too many eyes on the prize,” *New York Times Magazine*, October 8, 2000.

³Sean Creehan, “Best Sellers Abroad: China,” *The Atlantic Monthly*, May 2005, p. 131.

I will have nothing to say about why this use seems to be more common with plurals than with singulars, beyond noting that a similar effect occurs with free-choice *any*. Free-choice *any* is normally unacceptable in episodic contexts, as shown in (7) below, but Carlson (1981) notes that it becomes much better with a plural or mass noun in these contexts, as shown in (8–9), examples that Dayal (1998) attributes to Barbara Partee and Jason Stanley.⁴

- (7) * John spoke to any woman.
- (8) After the dinner, we threw away any leftovers.
- (9) Mary confidently answered any objections.

Why plurality should improve either free-choice *any* or non-deictic non-anaphoric demonstratives is an open question.

The interpretation of non-deictic non-anaphoric demonstratives is strikingly similar to the attributive use of definite descriptions. Like attributive definite descriptions, the special demonstrative construction can be paraphrased with a free relative containing *-ever*, as in (11) below, and is compatible with the appositive *whoever he is*.

- (10) That student who scored 100 on the exam, whoever he is, is a genius.
- (11) Whoever scored 100 on the exam is a genius.

Furthermore, like definite descriptions, the special construction can have an opaque interpretation in intensional contexts, as shown below.

- (12) That hero who killed the dragon might have been someone else.
- (13) Malory wants to write about that hero who killed the dragon.

⁴Free-choice *any* is also licensed in episodic contexts by postnominal modifiers, as shown below; see Dayal (1998) and Menéndez-Benito (2005) for discussion. The effect of the postnominal modifier here appears to be independent of the effect of plurality.

- (6) John spoke to any woman who came up to him.

Note that (12) has a noncontradictory interpretation; on this interpretation, the referent of the demonstrative description varies across possible worlds. The referent of the demonstrative description in (13) likewise varies across Malory's desire-worlds.

The similarity of the special use of demonstratives to attributive and opaque definite descriptions raises another potential objection to accounts which take this construction seriously: perhaps the construction is nothing more or less than a definite description in disguise, and all that needs to be done is to acknowledge that demonstrative determiners are ambiguous, with one use equivalent to the definite article. The view that demonstrative determiners are ambiguous is implicit in much of the foundational work on demonstratives. For example, Kaplan (1977) ignores non-deictic demonstratives entirely, and Davies (1982:307) appears to assume that demonstrative determiners are lexically ambiguous between a deictic interpretation and an interpretation that is equivalent to the definite article.

I agree that the special use of demonstratives is remarkably similar to definite descriptions; but I think this is an observation that needs to be explained, not the end of the story. If we are to understand the meaning of demonstrative determiners fully, we should understand what allows them to apparently collapse with definite articles in some circumstances but not others. The various interpretations are not always all available. In fact, I will argue that the special use is structurally licensed: it must contain a postnominal modifier.⁵ For example, (15) but not (14) below has the special non-deictic, non-anaphoric,

⁵Maclaran (1982) also notices that the non-deictic, non-anaphoric, attributive-like use of demonstratives is structurally licensed, although she does not give an analysis.

attributive-like interpretation. Notice that example (14) is unacceptable out of the blue but allows an anaphoric interpretation with appropriate contextual support.

- (14) * That inventor of the computer was a genius.
(\neq Whoever was the inventor of the computer was a genius.)
- (15) That person who invented the computer was a genius.
(\approx Whoever invented the computer was a genius.)

It's helpful to have a name for the syntactic construction that licenses King's NDNS use, and in what follows I will refer to the construction illustrated in (15) as the postmodified demonstrative construction.

The point of departure for this chapter is to investigate how the postmodified demonstrative construction licenses King's NDNS use, that is, to account for the properties of postmodified demonstratives summarized in (16) below.

- (16) Properties of postmodified demonstratives
- a. acceptable in non-deictic, non-anaphoric use
 - b. no implication that discourse participants can identify referent
 - c. attributive-like interpretation possible
 - d. opaque interpretation possible

In order to say something about the attributive-like interpretation of postmodified demonstratives, we need to have some understanding of the attributive/referential distinction in definite descriptions. Section 4.2 therefore presents an analysis of this distinction, as well as the relation of the attributive/referential distinction to the interpretation of definite descriptions in intensional contexts. After considering the structural licensing facts of attributive-like demonstratives in more detail, I extend the account of the attributive/referential distinction to demonstratives, leading to an explanation of why postmodified demonstratives (and no others) have an NDNS interpretation. The chapter concludes

by extending the analysis to opaque demonstrative descriptions. The account depends throughout on the analysis of demonstrative determiners developed in chapter 3, providing additional support for that approach.

4.2 Transparent and opaque, attributive and referential

The sentence in (17) below is ambiguous.

(17) John wants to kill the man who lives in Apartment 3. (Partee 1970)

In the *opaque* reading, John wants to kill whoever happens to live in Apartment 3. Perhaps he lives beneath this apartment and is irritated by the noise coming from it. In the *transparent* reading, John wants to kill a particular individual, who happens to be described as the man living in Apartment 3. John's enmity towards this man may be completely unrelated to where the man lives.

The distinction between these two readings appears to arise from the relative scope of the definite description and the propositional attitude verb. In the opaque reading, the definite description takes narrow scope under *want*, and the object of the description covaries with the situations quantified over by the attitude verb. In the transparent reading, the description takes wide scope, and the object of the description remains constant. A scope-based treatment of the ambiguity in (17) is popular (see, e.g., Abbott (1976), Farkas (1981), and Neale (1990)).

The sentence in (18) below also has two distinct uses, first described by Donnellan (1966).

(18) The murderer of Smith is insane.

On the *attributive* use, (18) conveys the proposition that whoever murdered Smith is insane. On the *referential* use, (18) conveys the proposition that a particular individual, who happens to be described as the murderer of Smith, is insane. The attributive use is appropriate when the speaker is commenting on an inference drawn from the gruesome nature of the murder scene; the referential use is appropriate when the speaker has observed Jones's deranged behavior on the witness stand and presumes that Jones murdered Smith. (These scenarios are intended only to bring out the intuition that there are two distinct uses of (18). Below we will see that the distinction is independent of the speaker's ability to identify the object of the description.)

Researchers have observed that the attributive/referential distinction in extensional contexts bears striking similarities to the transparent/opaque distinction in intensional contexts (Partee 1970, Abbott 1976). The attributive use of the definite in (18) is similar to the opaque use of the definite in (17) in that both seem to result in the expression of a general proposition, and thus can be paraphrased with a free relative containing *whoever*. The referential reading of the definite in (18) and the opaque use of the definite in (17) are similar in that both seem to result in the expression of a singular proposition; in a sense the description is used only to identify a (nonvarying) individual. There is one important difference between the two sentences, though. As Abbott (1976) observes, the two readings of sentences like (17) are truth-conditionally distinct, while the two uses of sentences like (18) are not truth-conditionally distinct.

One choice to be made in developing an account of the attributive/referential distinction is whether the account will address the transparent/opaque distinc-

tion as well. Previous work in linguistics and philosophy encompasses the entire range of possibilities. On some accounts the two distinctions are collapsed entirely (see, e.g., Abbott (1976)) or partially (see, e.g., Stalnaker (1970), Kratzer (1978), Farkas (1981)). Other accounts treat the two distinctions as entirely independent. A case in point is the line of research seeking to explain away the referential use of definite descriptions as a purely pragmatic phenomenon (see, e.g., Kripke (1977), Bach (2004), Salmon (2004)). The account that I will be adopting, which is a version of an approach due to Stalnaker and Kratzer, treats the attributive/referential and transparent/opaque distinctions as parallel but not identical. One advantage of this approach is that it explains why the distinctions are similar and also why only the transparent/opaque distinction results in a truth-conditional difference.

4.2.1 What the attributive/referential distinction is not

In the last section we saw that attributive uses of definite descriptions seem to result in the expression of general propositions, while referential uses seem to result in the expression of singular propositions. The account that I'll be pursuing takes this intuition as the basis of the attributive/referential distinction, but this is not the only conceivable position: there are a number of other interpretive differences that might be appealed to instead. In this section I briefly discuss three interpretive differences that seem at first to correlate well with the attributive/referential distinction: the intuition that a description has or doesn't have an essential connection with the main predicate, the ability of the speaker to identify the object of the description, and the equivalence

or nonequivalence of the object of the description to the individuals that the speaker intends to refer to by using the description. We will see that all three factors are in fact independent phenomena.⁶

Typical uses of attributive definite descriptions tend to suggest that there is an essential connection between the descriptive content and the main predication of the clause. If we take (18), repeated below, out of context and consider the attributive reading, it is very natural to think of a situation in which the murderer is known to be insane in virtue of the method of the murder.

(18) The murderer of Smith is insane.

Likewise, the opaque reading of (17), repeated below, tends to suggest that John wants to kill the man who lives in Apartment 3 in virtue of his living there.

(17) John wants to kill the man who lives in Apartment 3.

The referential and transparent readings, by contrast, have a tendency to suggest that the description is important only as a way to identify the referent and does not have an essential connection to the main predicate. The referential reading of (18) does not suggest that the murderer is insane in virtue of having committed the murder, and the transparent reading of (17) does not suggest that John wants to kill the man who lives in Apartment 3 in virtue of his living there.⁷

However, the suggestion of the essential or nonessential connection between predicates is at most a tendency. Abbott (1976:60) points out that (18) can

⁶See also Bach (2004) for an extensive review of approaches to the attributive/referential distinction in the philosophical literature.

⁷For further discussion of these issues, see Donnellan (1966) and Partee (1970). See also Dayal (1998) for discussion of a similar implication of essentiality associated with free-choice *any*.

be asserted felicitously in a situation in which the murderer of Smith, whose identity is unknown, “leaves a very erratic trail” consisting of evidence that he bought snowshoes and a plane ticket to the Bahamas. In those circumstances the definite description has an attributive interpretation (it can be paraphrased as *whoever murdered Smith*) but there is no essential connection between the description and the main predicate.

A description whose primary use is to identify a referent may also be important to the truth-conditional semantics. Farkas (1981:11) points out that the description in (19) below is most naturally understood as both identifying a particular individual that the speaker has in mind and giving the reason for expulsion:

(19) The guy who carried the big banner was expelled from the university. Similarly, the opaque reading of the description in (17) does not require an essential connection between the description and the main predicate—perhaps John wants to kill whoever lives in Apartment 3 because he has heard that this individual is an escaped criminal. And the transparent reading of the description in (17) can be used simultaneously as a way for the addressee to identify the referent and as a hint at John’s reasoning. These observations indicate that while the attributive/referential distinction may correlate with essentiality to some extent, the distinction cannot be characterized in terms of whether or not the description and the main predicate have an essential connection.

Typical utterances of referential definite descriptions tend to suggest that the speaker can name the object of the description, while typical utterances of attributive definite descriptions tend to suggest that the speaker cannot name

the object of the description. For example, a classic illustration of the distinction concerns a detective, who uses *the murderer of Smith* attributively while he is working to discover who murdered Smith, and uses the same description referentially after solving the case. Again, this turns out to be a tendency at best. As Donnellan (1966) himself points out, a definite description may be used attributively when the speaker takes the identity of the object of the description to be established. For example, a lawyer who takes the identity of Smith's murderer to be established may nevertheless argue that the murderer of Smith is insane on the basis of evidence that whoever carried out such a gruesome crime must have been insane. Furthermore, a speaker may successfully use a referential definite description without being in a position to name the intended referent. For example, the description in (20) below is most naturally understood as a referential use.

(20) The masked man over there is an idiot. (Farkas 1981, Bach 2004)

The appositives *namely X* and *whoever he/she is* are sometimes used as diagnostics for referential and attributive uses of descriptions, respectively. However, what these appositives really indicate is the speaker's ability or inability to name the intended referent of the associated description. Because this does not correlate perfectly with the attributive/referential distinction, the appositives do not make very reliable diagnostics.

According to Kripke (1977), the attributive/referential distinction is connected to a distinction between the *semantic referent* of a referring expression (the semantic value of the expression) and the *speaker's referent* (the individual that the speaker intends to refer to in using the referring expression). The two kinds of referents will often be the same, but they always have the potential to

diverge, even in the use of proper names. Kripke argues that the attributive use of a definite description is one in which the semantic referent and the speaker's referent are the same, while in the referential use, the two referents pick out different individuals (though the speaker may not be aware of this).

However, this claim is too strong. The definite description in (21) below is most naturally understood as a referential use, but surely does not involve a divergence between speaker's reference and semantic reference.

(21) The man over there is interesting.

And as Bach (2004:218) points out, it is possible for an attributive description to be nonliteral, so that the speaker's reference and the semantic reference diverge. For example, suppose that the speaker is under the mistaken impression that the Boston Marathon was won by a Nigerian this year. In fact it was won by a Kenyan, who broke a world record. Sentence (22) can be understood as communicating a true proposition if the addressee recognizes the divergence between the semantic referent of the attributive definite description (the individual described by the free relative *whichever Nigerian won the Boston Marathon today*) and the speaker's referent (the individual described by the free relative *whoever won the Boston Marathon today*). Convergence or divergence between speaker's reference and semantic reference, then, is independent of the attributive/referential distinction.

(22) The Nigerian who won the Boston Marathon today broke a world record.

Having set aside these issues, let us now turn to a proposal concerning the implementation of the attributive/referential distinction.

4.2.2 What the attributive/referential distinction is

To a certain extent, there has been convergence in the linguistic and philosophical literature on the view that sentences containing attributive descriptions express general propositions and sentences containing referential descriptions express specific propositions. Bach (2004) is especially thorough in defending this view, but it has been around for some time. It is particularly evident in Stalnaker (1970), Kratzer (1978) and Farkas (1981). These three authors implement the attributive/referential distinction in different ways, but all are interested in the same set of ideas about the interpretation of definite descriptions: namely, that the referent of an attributive description may vary across worlds, that the referent of an attributive description in any world satisfies the descriptive content in that world, and that a referential definite description is scopally inert, taking widest scope only.

Farkas (1981) implements these ideas by incorporating a hidden necessity modal into attributive descriptions. Although I won't pursue this approach, a similar effect will follow below from the presence of a bound world variable. The implementation that I will pursue descends most directly from the Stalnaker/Kratzer approach, so let's take a close look at those proposals now.

Stalnaker (1970) relies on a distinction between the function determining from the context of utterance the proposition expressed and the function determining the truth value of the resulting proposition in a world of evaluation. (Note the obvious similarity to Kaplan's (1977) character/content distinction.) In a nutshell, his proposal concerning the attributive/referential distinction is that referential descriptions contribute to the Kaplanian character and at-

tributive descriptions contribute to the Kaplanian content. For example, the proposition expressed by sentences (23–24) below, as well as the interpretation of (25) with a referential description, is something like (26), while the proposition expressed by (25) with an attributive description is something like (27). Stalnaker does not give explicit logical translations; I have taken the liberty of introducing somewhat updated translations for the sake of consistency with what follows. In light of the analysis adopted in the previous chapter, I use situation variables; nothing substantive would be lost in this section by replacing the situation variables with world variables, but situations will become important again later in the chapter.

- (23) Charles Daniels is bald. (Uttered by a friend of Daniels.)
- (24) I am bald. (Uttered by Daniels.)
- (25) The man in the purple turtleneck shirt is bald. (Uttered in a room where Daniels is the only man in a purple turtleneck.)
- (26) $\lambda s. \text{ bald}(d)(s)$
- (27) $\lambda s. \text{ bald}(\iota x. \text{ man-in-purple-turtleneck}(x)(s))(s)$

Note that while, according to Stalnaker, (23–24) and the referential use of (25) express the same proposition, i.e. have the same truth conditions, the proposition is determined in different ways, and the sentences have different presuppositions. In particular, the referential use of (25) presupposes that Daniels is wearing a purple turtleneck. The descriptive content of a referential definite description isn't thrown away; it determines the proposition expressed rather than participating directly in the truth conditions.

Stalnaker's treatment of the attributive/referential distinction extends straightforwardly to sentences with intensional operators and correctly predicts their ambiguity, as shown below:

- (28) The man in the purple turtleneck shirt might have worn white tie and tails.
- a. “Referential”/“Transparent” reading:
 $\lambda s. \exists s' \in R(s, s'). \text{wear-white-tie}(d)(s')$
 ‘Daniels might have worn white tie and tails.’
 - b. “Attributive”/“Opaque” reading:
 $\lambda s. \exists s' \in R(s, s'). \text{wear-white-tie}(\iota x. \text{m-i-p-t}(x)(s'))(s')$
 ‘Whoever was the unique individual wearing a purple turtleneck might have also worn white tie and tails.’

On this account, referential definites are scopally inert, taking widest scope, while attributive definites are modally anchored to the main predicate and can be bound by an intensional operator.

Kratzer (1978) reinterprets Stalnaker’s (1970) approach by replacing the character/content distinction with a one-level system that can track multiple modal parameters. She takes it for granted that the attributive/referential distinction and the opaque/transparent distinction can be collapsed, and focuses on the interpretation of definite descriptions in intensional contexts. Just as in Stalnaker’s analysis, an opaque (“attributive”) definite description depends on the situation variable that is bound by the intensional operator. Transparent (“referential”) definite descriptions work slightly differently: instead of contributing an entity to the propositional content, as Stalnaker’s account suggests, the descriptive content is represented in the semantics, but the modal parameter is given a value independently of the intensional operator, as shown below.

- (29) The man in the purple turtleneck shirt might have worn white tie and tails. (transparent/referential use)
 $\lambda s. \exists s' \in R(s, s'). \text{wear-white-tie}(\iota x. \text{m-i-p-t}(x)(s^*))(s')$

The value of the situation variable associated with a transparent description is fixed to the world of the utterance (in my terms, the situation corresponding to

the discourse context). As a result, a transparent description will be scopally inert and take wide scope over intensional operators, just as if an entity had been contributed directly to the semantics.

Although Kratzer (1978) doesn't discuss the attributive/referential distinction in extensional contexts, her account can easily be extended to such cases. We need to assume that in extensional contexts, the situation variable associated with a definite description can either be set independently (to the situation or world corresponding to the discourse context) or it can depend on the situation variable associated with the main predicate. The former is the referential use and the latter is the attributive use; the two interpretations are illustrated below.

(30) The man in the purple turtleneck is bald. (referential)
 $\lambda s. \text{bald}(\iota x. \text{man-in-purple-turtleneck}(x)(s^*))(s)$

(31) The man in the purple turtleneck is bald. (attributive)
 $\lambda s. \text{bald}(\iota x. \text{man-in-purple-turtleneck}(x)(s))(s)$

One practical advantage of the Kratzer proposal is that the attributive/referential distinction is implemented using only tools that are independently motivated in formal semantics. In order to implement Stalnaker's proposal in a compositional semantics, we would need to do one of two things: assume that the definite article is systematically ambiguous between a reading in which the description contributes to the character and a reading in which the description contributes to the content, or add a mechanism for allowing certain predicates to contribute to either character or content. Kratzer's version does not require us to treat the definite article as ambiguous, since the description is always interpreted as part of the truth-conditional content; nor do we need a mechanism for moving predicates between character and content. What we do need

is the ability for the modal parameters of nominals and main predicates to be independent. But this is something that is needed anyway for the analysis of definite and demonstrative determiners, and as we saw in the previous chapter, there is ample independent evidence for the view that nominal predicates have independent modal parameters.

4.2.2.1 How the account fits our intuitions

One very compelling advantage of the Stalnaker/Kratzer approach is that it correctly predicts that the transparent/opaque distinction is truth-conditional and that the attributive/referential distinction is not. Let's convince ourselves of this by working through some fresh examples. First consider the transparent and opaque interpretations of the definite description in (32) below; I've glossed over irrelevant details in the translations:

(32) If the 2000 U.S. presidential election had been by popular vote, the president of the U.S. in 2001 would have been moderate.

(33) transparent:

$$\lambda s.\forall s'[[R(s, s') \wedge \text{by-popular-vote}(\iota x.\text{election}(x)(2000)(s'))(s')]] \\ \rightarrow \text{moderate}(\iota x.\text{president-of-US}(x)(2001)(s_0))(s')$$

(34) opaque:

$$\lambda s.\forall s'[[R(s, s') \wedge \text{by-popular-vote}(\iota x.\text{election}(x)(2000)(s'))(s')]] \\ \rightarrow \text{moderate}(\iota x.\text{president-of-US}(x)(2001)(s'))(s')$$

Let's fix the facts as follows: the winner of the popular vote in 2000 was Al Gore; the president in 2001 was George W. Bush; in 2001 Gore was moderate and Bush was not moderate. Let's also make the simplifying assumption that a change in the election procedures in 2000 would not have changed which American citizens went to the polls or who they voted for. Given the transparent reading of the description, the predicted interpretation of the sentence

is roughly that if the president had been chosen by popular vote in 2000, then George W. Bush would have been moderate. The truth value of this interpretation depends on our assumptions about the extent to which George W. Bush's politics are influenced by the structure of our electoral system, and I'm inclined to judge it false. The predicted interpretation on the opaque reading of the description says approximately that all else being equal, if the president had been chosen by popular vote in 2000, the winner of that election would have been moderate. Given the facts fixed as above, this proposition is clearly true: the worlds that are most similar to our own world except for the rules for American presidential elections are worlds in which Gore wins the popular vote and is moderate. So far, so good: the account correctly predicts that the transparent/opaque distinction results in truth-conditional differences.

Now let's look at the predicted interpretations of extensional sentences containing definite descriptions, a subtler matter.

(35) The current president of the U.S. is interested in polls.

The attributive use of the description in the above example is appropriate, e.g., in a context in which the most relevant fact is that presidents need to keep up with polling data in order to stay in touch with the voters. The referential use is appropriate, e.g., in a context in which the most relevant fact is that George W. Bush is interested in polls, and might continue to be interested even if he were not president. So even a description like *the president of the U.S.*, the identity of whose referent is established, has distinguishable attributive and referential uses. But these uses do not affect the truth conditions of the sentence. If George W. Bush is interested in polls, both interpretations of the sentence are

true, and if not, both interpretations are false.⁸

In spite of the fact that the variant of the Stalnaker/Kratzer analysis that we are considering builds the attributive/referential distinction right into the compositional semantics, it correctly predicts that the two interpretations of (35) will never have different truth values. The predicted interpretations are shown below.

(36) referential:
 $\lambda s.\text{interested-in-polls}(\iota x.\text{president-of-US}(x)(\mathbf{s}_\theta))(s)$

(37) attributive:
 $\lambda s.\text{interested-in-polls}(\iota x.\text{president-of-US}(x)(\mathbf{s}))(s)$

On the referential interpretation, the description *current president of the U.S.* is independently relativized to the situation corresponding to the discourse context, and on the attributive interpretation it is relativized to the situation associated with the main predicate. But, since this is a purely extensional sentence, the situation associated with the main predicate is also the situation corresponding to the discourse context. So when we calculate the truth value of the sentence relative to s_θ , both interpretations collapse to the following:

(38) $\text{interested-in-polls}(\iota x.\text{president-of-US}(x)(s_\theta))(s_\theta)$

In other words, the truth value of sentences containing attributive and referential descriptions are calculated differently, but in any given context, the result will be the same. It's perhaps surprising to consider going to all that trouble to end up with the same truth value. But the analysis delivers just what we need. The obvious intuitive similarity between the transparent/opaque and

⁸There might be contexts in which the attributive use of a description is felicitous and the referential use is not. But it appears that in order to describe the conditions under which a referential definite is felicitous, we'd need to describe the conditions under which reference is successful, and I leave this issue to the philosophers.

attributive/referential distinctions is explained: these two sets of distinctions depend on exactly the same mechanism. At the same time, we correctly predict that the transparent/opaque distinction is truth-conditional and the attributive/referential distinction is not.

The account also leaves just enough room to explain the weak correlations that we observed in section 4.2.1 between the attributive/referential distinction and other phenomena. We saw first that there is a tendency for attributive uses to suggest an essential connection between the description and the main predicate. On this approach, using a definite description attributively means that the object of the description covaries with the situation associated with the main predicate. For example, the attributive use of the definite description in (39) below results in a proposition in which, in every situation where the referent of the subject DP is insane, the referent is also the murderer of Smith. (This is also reflected in Farkas's (1981) use of a necessity modal.)

(39) The murderer of Smith is insane.

Under what circumstances would this covariation hold? One obvious circumstance is one in which there is a nonaccidental correlation between an individual being Smith's murderer and that individual being insane, that is, the murderer is insane in virtue of being a murderer or vice versa. Thus it is quite natural for an attributive use of a definite description to suggest an essential connection between the description and the main predicate. On the other hand, the correlation between the two predicates could just be an accidental fact about our model. Perhaps we made some previous assumptions that entailed that all of our murder suspects are insane for independent reasons. So the account correctly predicts that an attributive definite description does not necessarily

involve an essential connection between the description and the main predicate.

Second, we saw that there is a tendency for the referential use to suggest that the speaker can name the referent and the attributive use to suggest that the speaker cannot. If a description covaries with the situation associated with the main predicate, as in the attributive use, then it's natural to conclude that the object of the description differs across worlds; if so, then of course the speaker is not in a position to name the object of the description. Covariation does not compel the object of the description to differ across worlds, however, so the attributive use is also compatible with contexts in which the speaker takes the object of the description to be established. Likewise, because the referent of a referential definite description is fixed independently of the rest of the sentence, it is natural but not necessary to conclude that the speaker can name the referent.

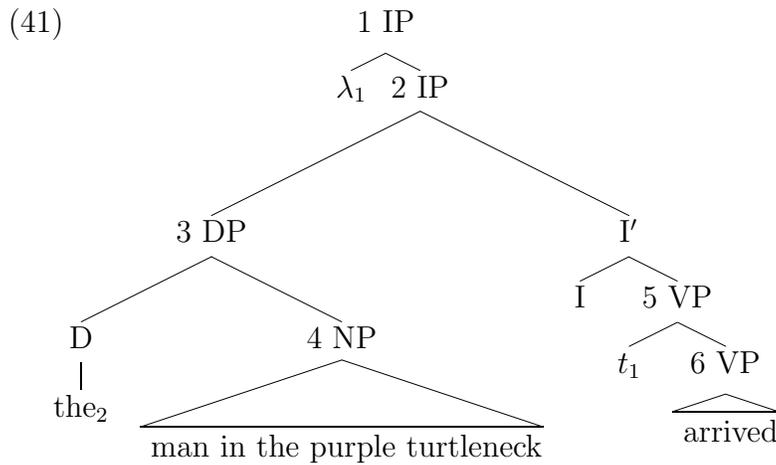
4.2.2.2 More technical details

Let me now say a few words about further technical details that I am adopting for the sake of concreteness. I continue assume that logical forms contain indexed situation variables (following Percus 2000) and that the logical translations of these structures involve explicit quantification over situation variables. Recall also that I take all predicates to have a situation argument. The situation argument of the main predicate is bound by an abstraction operator that originates in VP and moves to adjoin to IP. This results in the main predicate having fixed scope. The situation argument of the nominal complement of a definite or demonstrative determiner is saturated by the determiner. This re-

sults in the NP having free scope, unless other constraints are in effect. For the time being, no other situation arguments are relevant.

Let's look at how the interpretations we're aiming for are derived in this system.⁹ In extensional contexts, the variable associated with a definite description is free in the referential use and bound by the abstraction operator adjoined to IP in the attributive use.

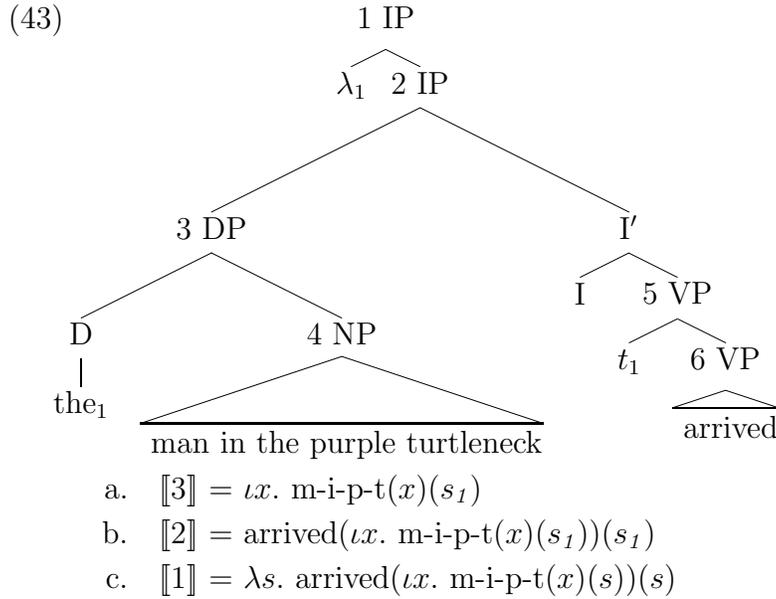
(40) The man in the purple turtleneck arrived. (referential use)



- a. $\llbracket 4 \rrbracket = \lambda s \lambda x. \text{m-i-p-t}(x)(s)$
- b. $\llbracket the_2 \rrbracket = \lambda \mathcal{P}. \mathcal{P}(s_2)$ is a singleton set.
If defined, denotes $\iota x. \mathcal{P}(x)(s_2)$
- c. $\llbracket 3 \rrbracket = \iota x. \text{m-i-p-t}(x)(s_2)$
- d. $\llbracket 6 \rrbracket = \lambda s \lambda x. \text{arrived}(x)(s)$
- e. $\llbracket 5 \rrbracket = \lambda x. \text{arrived}(x)(s_1)$
- f. $\llbracket 2 \rrbracket = \text{arrived}(\iota x. \text{m-i-p-t}(x)(s_2))(s_1)$
- g. $\llbracket 1 \rrbracket = \lambda s. \text{arrived}(\iota x. \text{m-i-p-t}(x)(s_2))(s)$

⁹I continue to disregard tense.

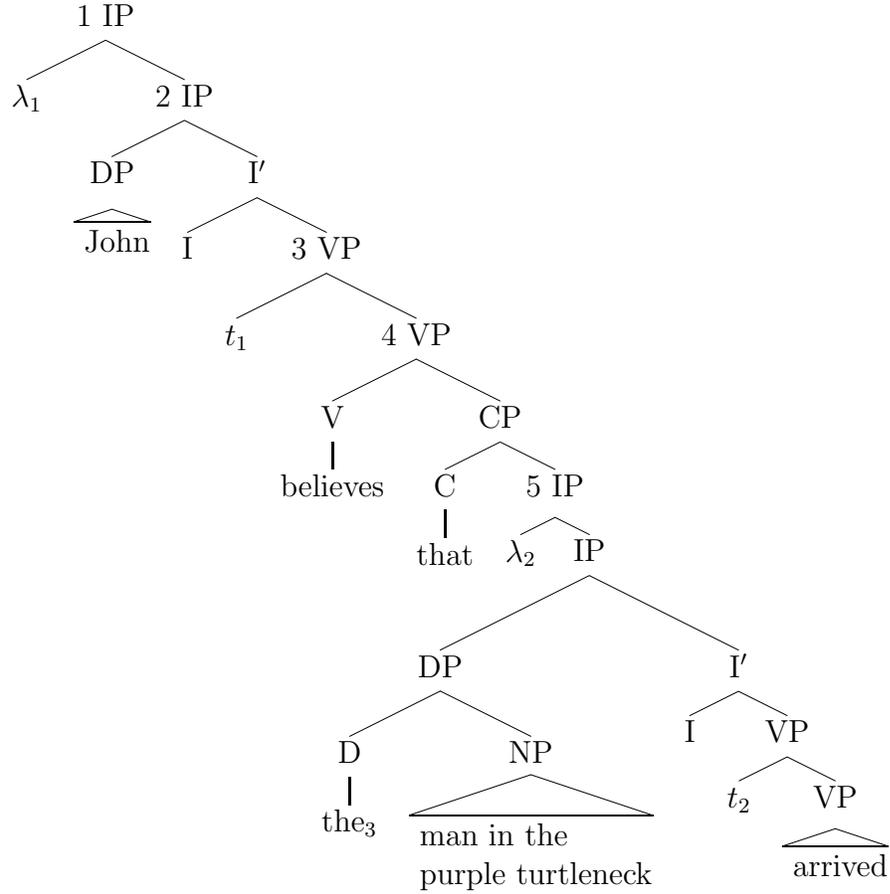
(42) The man in the purple turtleneck arrived. (attributive use)



The interpretation of a sentence is a proposition (a set of worlds or situations). The truth value is determined by evaluating the proposition at the situation of the context. In the referential use, the free situation variable associated with the definite description is also set to the situation of the context.

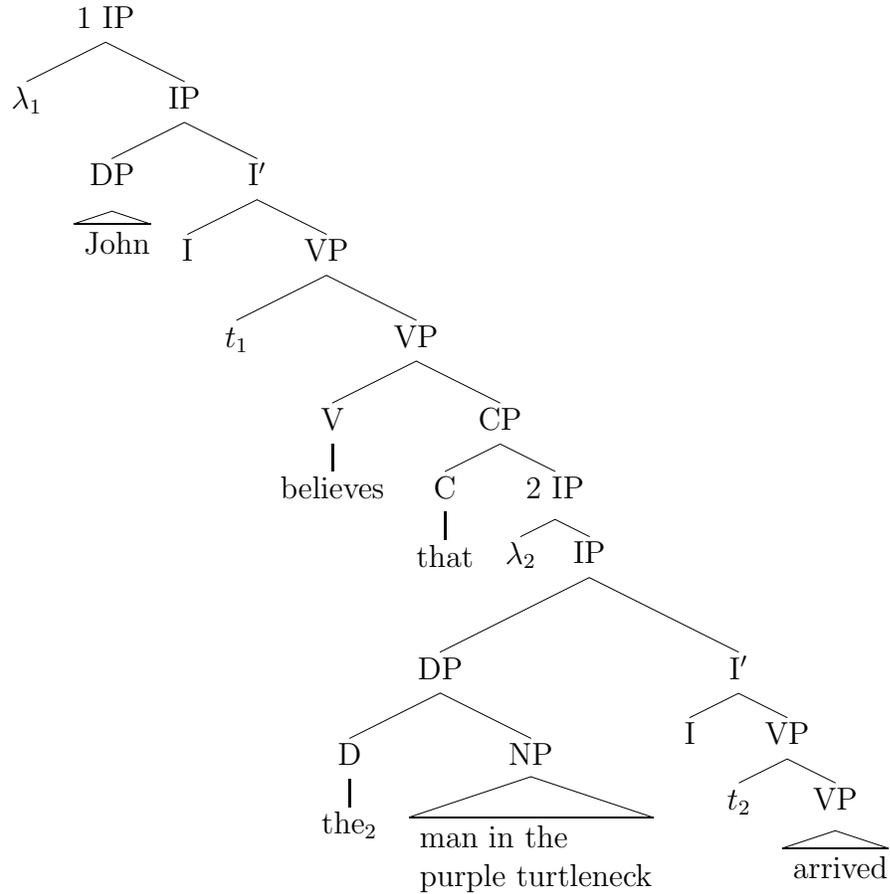
In intensional contexts, transparent and opaque descriptions are treated exactly the same way: transparent descriptions are associated with free variables and attributive descriptions are associated with variables bound by an abstraction operator. As a result, transparent and opaque descriptions are evaluated in different situations (and different worlds), and the sentences in question are truth-conditionally distinct. Representative examples are shown below, where $\text{Dox}_j(s)$ is the set of situations doxastically accessible to John from situation s .

- (44) John believes that the man in the purple turtleneck arrived. (transparent interpretation)



- a. $\llbracket 5 \rrbracket = \lambda s. \text{arrived}(\iota x. \text{m-i-p-t}(x)(s_3))(s)$ (see (40))
- b. $\llbracket \text{believe} \rrbracket = \lambda p \lambda s \lambda x. \forall s' \in \text{Dox}_x(s)[p(s')]$
- c. $\llbracket 4 \rrbracket = \lambda s \lambda x \forall s' \in \text{Dox}_x(s)[\text{arrived}(\iota x. \text{m-i-p-t}(x)(s_3))(s')]$
- d. $\llbracket 3 \rrbracket = \lambda x \forall s' \in \text{Dox}_x(s_1)[\text{arrived}(\iota x. \text{m-i-p-t}(x)(s_3))(s')]$
- e. $\llbracket 2 \rrbracket = \forall s' \in \text{Dox}_j(s_1)[\text{arrived}(\iota x. \text{m-i-p-t}(x)(s_3))(s')]$
- f. $\llbracket 1 \rrbracket = \lambda s. \forall s' \in \text{Dox}_j(s)[\text{arrived}(\iota x. \text{m-i-p-t}(x)(s_3))(s')]$

- (45) John believes that the man in the purple turtleneck arrived. (opaque interpretation)

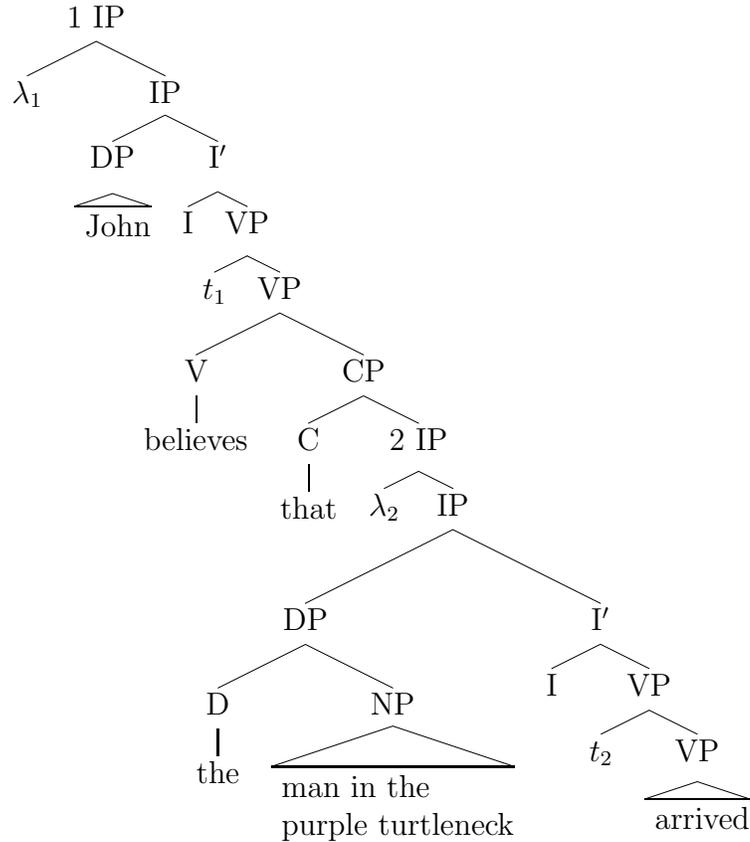


- a. $\llbracket 2 \rrbracket = \lambda s. \text{arrived}(\iota x. \text{m-i-p-t}(x)(s))(s)$ (see (42))
 b. $\llbracket 1 \rrbracket = \lambda s. \forall s' \in \text{Dox}_j(s) [\text{arrived}(\iota x. \text{m-i-p-t}(x)(s'))(s')]$

4.2.2.3 A Third Reading

It may already be obvious that the trees shown above do not cover all of the logical possibilities for the interpretation of descriptions in intensional contexts. If we allow situation variables to be bound non-locally, then the embedded description can also be bound by the abstraction operator adjoined to the matrix clause, as shown below:

(46)



- a. $\llbracket 2 \rrbracket = \lambda s. \text{arrived}(\iota x. \text{m-i-p-t}(x)(s_1))(s)$
- b. $\llbracket 1 \rrbracket = \lambda s. \forall s' \in \text{Dox}_j(s) [\text{arrived}(\iota x. \text{m-i-p-t}(x)(s))(s')]$

In the initial discussion of the transparent/opaque distinction, we identified just two readings for a sentence like this, readings which correspond to the interpretations shown in the previous section. Given the three structures generated by this analysis, we have no additional distinctions to make with regard to opaque descriptions, but we predict that transparent descriptions have two uses corresponding to the attributive and referential uses of descriptions in extensional sentences. The two predicted uses of transparent descriptions shouldn't be truth-conditionally distinct, but they should be distinguishable by the diagnostics that we used previously to tease apart referential and at-

tributive descriptions.

Since we're interested in transparent descriptions, let's consider (47–48) below, which are plausible when the description is transparent and contradictory when the description is opaque.

(47) The murderer of Smith might not have murdered Smith.

(48) The inventor of the light bulb might not have invented the light bulb.

The attributive use of these transparent descriptions conveys the general propositions that murdering Smith or inventing the light bulb was not inevitable, regardless of who actually did these things. This interpretation can be paraphrased with a free relative:

(49) Whoever murdered Smith might not have murdered Smith.

(50) Whoever invented the light bulb might not have invented the light bulb.

The referential use of the transparent descriptions in (47–48) conveys that Jones's (say) and Edison's actions were not inevitable, and can be made more salient with a *namely*-appositive.

(51) The murderer of Smith, namely Jones, might not have murdered Smith.

(52) The inventor of the the light bulb, namely Edison, might not have invented the light bulb.

So when we look closely at transparent descriptions, we find that they have attributive and referential uses, which can be distinguished by the same diagnostics that apply to attributive and referential descriptions in extensional contexts. The predicted third reading appears to exist.

4.2.3 Taking stock of the distinctions

We began this section with two distinctions which seemed to be parallel: the transparent/opaque distinction and the attributive/referential distinction.

Some researchers (e.g. Stalnaker (1970), Abbott (1976)) have taken these pairs of terms to be synonymous, while others (e.g. Fodor (1970)) have argued that they are independent. According to the analysis developed in this section, the two pairs of terms have to do with the same phenomenon—the interpretation of the modal parameter of a description—but they are not synonyms. *Attributive* descriptions contain bound situation variables. *Referential* descriptions contain free situation variables. *Opaque* descriptions contain situation variables bound by intensional operators (and are therefore attributive). Finally, *transparent* descriptions contain situation variables that are *not* bound by intensional operators, and can be either attributive or referential. Henceforth, I will use these more theory-specific interpretations of the technical terms.

At the beginning of this section we saw that the transparent/opaque distinction appears to have to do with the relative scope of descriptions and intensional operators. The main cause for hesitation on this point was that the attributive/referential distinction seemed to be parallel, and is clearly not a scopal distinction.¹⁰

However, the analysis developed above allows us to eat our cake and have it too on this point. The transparent/opaque distinction turns out to have to do with semantic scope, provided that we take a predicate to have narrow scope under an intensional operator when its situation variable is bound by that operator (and this is hardly a surprising move, given that covariation with situations is the prime diagnostic for narrow scope under an intensional

¹⁰Unless of course we treat binding by the abstraction operator that I have posited to be a scopal relation. One might also consider treating the attributive/referential distinction in terms of scope with respect to a speech-act operator. The latter approach does not appear promising, however. See Abbott (1976) for discussion.

operator).¹¹ The referential/attributive distinction has to do with whether or not the situation variable associated with a description is dependent on the situation variable associated with the main predicate, and is not a scopal relation. And the two distinctions are nevertheless parallel, because both have to do with how situation variables are anchored.

4.2.4 Is the attributive/referential distinction semantic or pragmatic?

It is a matter of considerable controversy in the philosophy of language whether the attributive/referential distinction is semantic or pragmatic. In a recent collection, for example, Devitt (2004) argues that sentences containing attributive and referential descriptions express different propositions, while Nunberg (2004), Bach (2004) and Salmon (2004) argue that simple sentences containing definite descriptions are semantically unambiguous, and that the distinction between attributive and referential uses is pragmatically derived. Because we do not have access to intuitions about the “proposition expressed” by a sentence apart from its interpretation in context, and because the difference between the two uses is not (always) truth-conditional, it is extremely difficult to tease apart these positions. What I hope to show, therefore, is that the analysis I have presented is consistent with either position on this question.¹²

The analysis implements the distinction within the compositional semantics,

¹¹This is consistent with the view expressed in Farkas (1997b) that scopal relations should be treated as dependencies between indices rather than as purely structural relations. Structural considerations will become important below, though.

¹²Stalnaker’s (1970) more nuanced view is that the referential/attributive distinction is a case of “pragmatic ambiguity,” or distinction at the level of the Kaplanian character. Recanati (1996) shares this view.

and the proposition expressed depends on whether a description is interpreted as attributive or referential. The analysis is therefore clearly consistent with the view that the attributive/referential distinction is semantic.

It is not difficult to see, however, how the analysis is also consistent with the view that the attributive/referential distinction is pragmatic. Notice that the treatment of situation variables here is parallel to the fairly standard treatment of (some) pronouns as indexed variables whose value is supplied by the context. It is relatively uncontroversial that the value of a pronoun like *he* below

(53) He is happy.

is determined by pragmatic factors, but that this affects what proposition is expressed by the truth-conditional semantics. This is a kind of pragmatic influence on semantics which is at least very familiar, even if it is not perfectly understood. If the same process affects the interpretation of situation variables, then we can apply this existing framework to understand the distinction as essentially pragmatic but nevertheless affecting the compositional semantics.

Furthermore, under the analysis presented here, the definite article and the descriptive content make the same contribution to the semantics in both uses; only the value of the situation variable changes. This is quite consistent with the proposals of those who take the distinction to be pragmatic. If anything, then, the analysis has more in common with the “pragmatics” side of the controversy than with the “semantics” side.

4.2.5 Conclusion

In this section I have developed an analysis of the attributive/referential distinction in definite descriptions which is an updated version of proposals by Stalnaker and Kratzer, and argued that the analysis captures our intuitions about this use. I have also argued that the attributive/referential distinction and the transparent/opaque distinction are closely related but not identical.

Now we are ready to return to the main task of this chapter, namely accounting for the special properties of demonstratives with postnominal modifiers. In the next section I apply the analysis of the attributive/referential distinction to demonstrative descriptions.

4.3 Attributive demonstrative descriptions

Now that we have an analysis of the attributive/referential distinction on the table, we're ready to look at the attributive-like interpretation of postmodified demonstrative descriptions. I begin by showing that the attributive reading of demonstratives is licensed by postnominal modification, and then develop an analysis of the postmodified demonstrative construction.

4.3.1 Licensing

The examples of the postmodified demonstrative construction in the introduction all include a relative clause. This is no accident: the construction is structurally licensed by a postnominal modifier. In this section, I show that the availability of a non-deictic, non-anaphoric, attributive-like interpretation of a

demonstrative depends on the presence of a postnominal modifier. Because I am focusing on the availability of a non-deictic, non-anaphoric interpretation, the judgments in this section reflect the acceptability of the sentence in question out of the blue and without a demonstration. Note that many of the starred examples are acceptable under an anaphoric interpretation, with suitable contextual support.

As we have already seen, demonstrative descriptions with restrictive relative clauses allow a non-deictic, non-anaphoric, attributive-like interpretation, and demonstratives with unmodified nominals do not. The unmodified demonstrative in (55) below is thus unacceptable out of the blue and without a demonstration.

(54) That person who discovered fire was a genius.

(55) * That discoverer of fire was a genius.

Nonrestrictive relative clauses do not license the attributive interpretation, as shown below:

(56) * That prehistoric individual, who discovered fire, was a genius.

Attributive demonstratives are also not licensed by complements of N, even clausal complements:

(57) * John_i/Every boy_i was tempted by that idea that he_i was a genius.

The construction is licensed by degree/amount relatives, as shown in (58), and by relatives involving abstraction over kinds, as shown in (59).¹³

(58) I took with me those books that there were on the table.

¹³For discussion of degree/amount relatives and related phenomena, see Carlson (1977), Heim (1987) and Grosu and Landman (1998). Examples (58–59) are based on examples due to Grosu and Landman (1998).

- (59) You never see those telephones that there were in my grandmother's time.

The construction is also licensed by postnominal modifiers smaller than relative clauses, including PPs, APs with complements, and bare postnominal adjectives:

- (60) That person at the top of the list will be offered the job.
(61) That runner in last place will receive a consolation prize.
(62) That person responsible for the disaster will be fired.
(63) That person responsible will be fired.
(64) Those people available were hired.
(65) We catalogued those stars visible.

Prenominal adjectives do not license the construction:

- (66) * That unhelpful person will be fired.
(67) * Those friendly applicants will be hired.
(68) * Those legal immigrants were granted citizenship.

The postnominal adjectives in (63–65) above have a stage-level interpretation (they denote temporary properties), while the prenominal adjectives in (66–68) are most naturally interpreted as individual-level (denoting permanent or inherent properties). One might wonder, then, whether the licensing ability of the postnominal adjectives is due to the stage-level interpretation rather than the postnominal position. This can easily be tested, because as Larson (1998) has observed, adjectives like *responsible*, which appear in both prenominal and postnominal position, allow a stage-level interpretation in both positions in at least some dialects of English. That is, *the person responsible* can only be used to refer to someone who is responsible for some event, while *the responsible person* can refer either to an individual who is responsible for some event or

an individual who has a responsible character. Likewise, *the stars visible* can only refer to stars that are currently visible, while *the visible stars* can refer either to stars that are currently visible or to stars that, due to their location and brightness, are in principle visible without artificial aid.¹⁴

Larson (1998) also observes that prenominal adjectives tend to have a stage-level interpretation when they are farther away from the head noun. The stage-level interpretation is particularly clear when the individual-level interpretation is excluded by another adjective. For example, in (69) below the individual-level interpretation of the higher adjective *responsible* is incompatible with the lower adjective *irresponsible*.

(69) the responsible irresponsible person

If we use Larson's technique for forcing a prenominal adjective to take a stage-level interpretation, we find that it still does not license the attributive interpretation of a demonstrative description:

(70) * That responsible irresponsible person will be fired.

(71) * We circled those invisible visible stars on the chart so that we'd remember to look for them another night.

This shows, surprisingly, that it is the position of the adjective rather than its interpretation that licenses the attributive use.

The licensing of attributive demonstratives by superlatives confirms the observation that the crucial factor is the position of the modifier. Examples (72–75) below show that prenominal superlatives do not license the construction, while postnominal modifiers containing superlatives do.

¹⁴Some speakers (including Bolinger (1967)) accept only the individual-level interpretation of prenominal adjectives. For those speakers, it will not be possible to tease apart the position and interpretation of this class of adjectives.

- (72) * That smallest prime number is of interest to mathematicians.
 (73) That prime number which is smallest is of interest to mathematicians.
 (74) * The students memorized that shortest poem.
 (75) The students memorized that poem which was shortest.

Furthermore, an infinitival relative which is dependent on a prenominal superlative or ordinal rather than a direct modifier of the head noun does not license the construction:¹⁵

- (76) * That first hero to kill a dragon will inherit half the kingdom.

As we might expect, the construction is licensed by infinitival relative clauses that are not dependent on a prenominal element. Postnominal demonstratives with infinitival relatives happen to be difficult to construct, so I rely here on attested examples. The postmodified demonstratives in (77–80) below contain subject gap infinitival relatives, (81) contains a non-subject gap infinitival relative.

- (77) Those men to be shipped elsewhere for discharge were put on their way as rapidly as possible, and those to be reassigned quickly moved out to their new jobs or to furloughs.¹⁶
 (78) Governor Ford’s face turned pale, and Jones remarked, “If you do not do this, I have but one more desire, and that is if you leave their lives in the hands of those men to be sacrificed —”¹⁷
 (79) All fraternities must submit the names of those men to be initiated at least one (1) week prior to the initiation.¹⁸
 (80) It wasn’t one of those books to be read in a single sitting, but the story really drew me in.¹⁹

¹⁵See Bhatt (1999) for arguments that non-modal infinitival relatives are licensed by superlatives, ordinals and *only*.

¹⁶<http://www.nps.gov/wapa/indepth/exContent/pcn-190-003143-00/sec4.htm>

¹⁷<http://www.utlm.org/onlinresources/josephsmithsdeath.htm>

¹⁸<http://cyberbuzz.gatech.edu/ifc/documents/documents/Bylaws.doc>

¹⁹http://www.amazon.com/gp/product/customer-reviews/0060956496?_encoding=UTF8&n=283155&s=books

(81) It's one of those books to read on a rainy day...²⁰

Finally, attributive demonstratives are licensed by participial reduced relatives:

(82) Those students writing a term paper should meet with the instructor.

(83) Those articles read by the students came from major journals.

The structural licensing condition on the attributive reading of demonstrative descriptions is summarized below:

(84) *Structural licensing of attributive demonstratives*

An attributive reading of a demonstrative description is licensed by a postnominal modifier of any category.

We have seen that the attributive reading is not licensed by any other structure in NP, including complements of N, prenominal modifiers, and phrases dependent on prenominal modifiers.

4.3.2 Analysis

Let's take seriously the idea that attributive-like and referential-like interpretations of demonstrative descriptions reflect the same distinction as that found in definite descriptions, and apply the analysis developed in the previous section.

This leads us to the following generalizations:

(85) Ordinary demonstrative descriptions are relativized only to free situation variables.

(86) Postmodified demonstratives may contain bound situation variables.

The first generalization is consistent both with the analysis of demonstrative determiners proposed in the previous chapter and with the direct reference account of demonstratives. If demonstrative descriptions refer directly, then

²⁰<http://www.emmalee.com/O/recommend.php>

their descriptive content will not interact with the rest of the sentence, and thus relativization to a bound variable will be out of the question. If, as I have argued, demonstrative descriptions are relativized to non-default situations and bound situation variables are default situations, the generalization in (85) is just what we expect. So both accounts predict ordinary demonstratives to be stubbornly transparent and referential. The second generalization departs from the standard direct reference account, though. If demonstrative descriptions refer directly, the addition of a postnominal modifier should not affect the availability of an attributive interpretation. On the other hand, the account proposed in the last chapter has room to accommodate opaque and attributive demonstratives; in fact, we have already considered anaphoric and bridging uses of demonstrative descriptions that are opaque.

The first generalization draws a parallel between referential definite descriptions and ordinary demonstrative descriptions, but it is not a claim that these two kinds of descriptions are equivalent. The differences between definite and demonstrative descriptions that we considered in the previous chapter and that are independent of the anchoring of the situation parameter still apply. For example, referential definite descriptions, but not demonstrative descriptions, may be semantically unique (*the mother of John* but not **that mother of John*), and demonstrative descriptions, but not referential definite descriptions, may be completed with a demonstration. The analysis thus departs from the view of Wettstein (1981) and Devitt (2004) that referential definite descriptions are a sort of disguised demonstrative.²¹

²¹Nunberg (2004) also argues that demonstratives and referential definite descriptions are not equivalent; Russell (1957) foreshadows Wettstein's (1981) account by suggesting that the

We have already seen that there is reason to believe that determiners can constrain the modal parameters of their nominal complements. There is also a precedent in the literature for the second generalization. Dayal (1998, 2004) has argued, primarily on the basis of “subtriggered” free-choice *any*, that the situation variable associated with a postnominal modifier may be independent of the situation variable associated with the head noun, while prenominal modifiers are “modally dependent,” so to speak, on the head noun. If postnominal modifiers are in general “modally independent” from head nouns, as well as from the main predicate, it would not be that surprising for a postnominal modifier to introduce a new situation variable. In other words, postnominal modifiers are exactly the constituents that we might expect to mediate between the demonstrative determiner’s [non-default] feature and the covariation necessary for an attributive or opaque interpretation.

What we need now is a concrete implementation of these generalizations. How the generalizations are implemented is independent of the generalizations themselves, and my primary claim is that any adequate treatment of demonstrative descriptions must account for the generalizations in (85–86). But implementing the generalizations is not merely a technical exercise. The account that I develop in the next section appeals to structural binding conditions on situation variables, and as we’ll see, this has nontrivial consequences for the syntax and semantics of postmodified demonstratives.

problem of incomplete definite descriptions can be reduced to the effects of indexicality.

4.3.3 Determiners, modifiers and situation variables

The analysis of demonstrative determiners in chapter 3 already predicts that unmodified demonstratives will not be relativized to bound situation variables.

The proposed interpretations of *the* and *that* are repeated below.

- (87) $\llbracket the_n \rrbracket$: $\lambda\mathcal{P}_{\langle s, et \rangle} : \mathcal{P}(s_n)$ is a singleton set.
If defined, denotes $\iota x.\mathcal{P}(x)(s_n)$
- (88) $\llbracket that_n \rrbracket$: $\lambda\mathcal{P}_{\langle s, et \rangle} : \mathcal{P}(s_n)$ is a singleton set and s_n is non-default.
If defined, denotes $\iota x.\mathcal{P}(x)(s_n)$
- (89) Given a sentence S, a situation variable s is a *default situation* just in case it is bound in S. Otherwise s is a *non-default* situation.

I assume that the situation argument of an intersective prenominal modifier depends on the situation argument of the head noun. Combining a nominal with a demonstrative determiner results in the saturation of the nominal's situation argument with a non-default situation. The situation variable bound by an intensional operator is a default situation. So demonstrative descriptions will not be relativized to situation variables bound by intensional operators. For example, (90) below is felicitous just in case the situation parameter associated with the content of the demonstrative description is not the same variable that is associated with the main predicate and bound by the high abstraction operator. The felicitous interpretation of (90) is shown in (91). Note that this reading is comparable to the analysis of referential definite descriptions adopted in the last section in that the description is relativized to a free variable.

- (90) That responsible person was fired.
- (91) $\lambda s.\text{fired}(\iota x.\text{person}(x)(s')) \wedge \text{responsible}(x)(s'))(s)$

The remaining issue, then, is to explain how the modal parameter of a postnominal modifier escapes being saturated by the determiner and licenses

an attributive reading. There are two possibilities to consider. Possibility A is that postnominal modifiers have enough structure to constitute a separate binding domain. Possibility B is that postnominal modifiers may be attached unexpectedly high and thus fall outside of the c-command domain of the determiner.

Possibility A is initially appealing because it allows us to maintain a standard syntax of postnominal modifiers as NP adjuncts. Furthermore, Sadler and Arnold (1994) argue that postnominal adjectives have more structure than prenominal adjectives. Because bare postnominal adjectives are the smallest postnominal modifiers, a successful argument that they have more structure than prenominal modifiers lends plausibility to the idea that postnominal modifiers in general, but not prenominal modifiers, contain enough structure to constitute a separate binding domain for situation variables.

However, Possibility A also faces two challenges. The first challenge is to account for the interpretation of prenominal/postnominal bare adjective pairs which differ only in their ability to license the postmodified demonstrative construction. Recall that certain adjectives like *responsible* allow a stage-level interpretation in both prenominal and postnominal position. If we assume that the postnominal version of the adjective in fact has more functional structure than the prenominal version, we must be very careful to make sure that nothing else about the interpretation is changed, and furthermore we must make sure not to include tense in the functional structure, since the adjectives are clearly tenseless. This all seems quite difficult.

The second challenge is to maintain the account of why infinitival relatives that depend on prenominal superlatives do not license the construction. It is hard to imagine how a bare adjective might have enough structure to constitute a separate binding domain while an infinitival relative clause did not.

These challenges for possibility A suggest that we should instead pursue possibility B and assume that a postnominal modifier may escape the binding domain of a demonstrative determiner by virtue of a high attachment site. Specifically, I will assume that postnominal modifiers may adjoin to DP and that DP-adjuncts are not c-commanded by D^0 . Now, the difficulty of this approach is that there simply aren't any independent syntactic tests for the height of attachment of a right adjunct.²² Nor are there independent semantic arguments for height of attachment, since the debate between Partee (1975) and Bach and Cooper (1978) has demonstrated that the standard interpretation of restrictive relative clauses can be derived compositionally regardless of how high the relative clause is attached. On the other hand, this difficulty is also a source of freedom. It appears that a coherent account of postnominal modifiers does not depend on their position. So why not make the most of the tools at hand and admit both NP and DP adjuncts into the picture?

²²It's tempting to think that constructions appearing to consist of a pronoun with a postnominal modifier, such as the ones illustrated below, show that postnominal modifiers must be able to adjoin to DP, in that pronouns have been argued to be intransitive Ds.

- (i) Those interested in linguistics should read *The Language Instinct*.
- (ii) Someone with green hair knocked at the door.
- (iii) Many who were prepared for the test left early.

However, it is also possible to analyze these constructions as involving an NP projection, so they do not constitute conclusive evidence. See chapter 5 for an argument that the construction in (i) contains a null noun.

4.3.4 Two paths to the same goal

So far we have established that in order to maintain a structural binding condition on the situation variables in demonstrative descriptions, we must allow some postnominal modifiers to adjoin to DP. To complete the analysis, we need to determine how DP adjuncts compose with the DPs that they are adjoined to. Blind functional application clearly won't do. As it happens, the literature supplies two possible strategies.

The first strategy for composing DPs with DP-adjoined modifiers relies on the semantics developed by Dayal (Srivastav 1991, Dayal 1995) and Bhatt (2003) for Indo-Aryan correlative constructions, such as the Hindi example shown below.

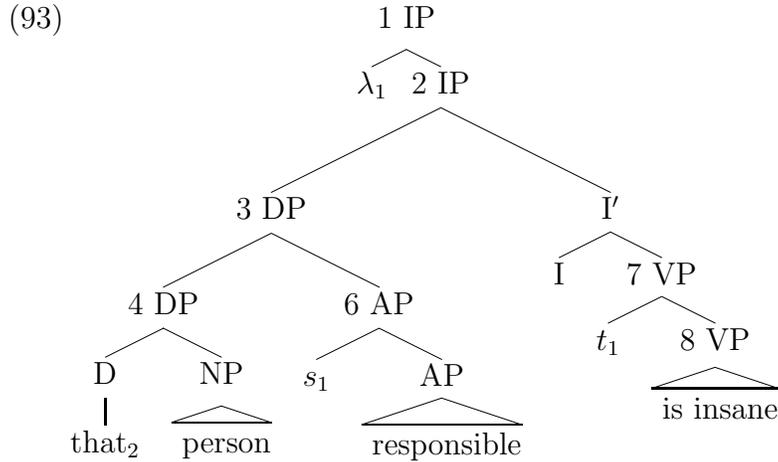
- (92) jo laRkii khaRii hai, vo lambii hai
which girl standing is DEM tall is
'The girl who is standing is tall.' (Dayal 1995: ex. (1))

In correlative constructions like this, a relative clause is adjoined to IP, and (intuitively speaking) modifies a demonstrative DP in the main clause. Dayal's and Bhatt's analyses of this construction differ in details, but their proposals share several main ideas. The relative clause is typeshifted from a predicative to a referring or quantificational interpretation. The demonstrative DP is interpreted as anaphoric to the typeshifted modifier (or as a bound variable). The anaphoric relation results in an interpretation that has the same entailments as a sentence containing an ordinary restrictive relative clause interpreted via predicate modification.

Treating postmodified demonstrative descriptions along the lines of this analysis of correlative constructions means making the following assumptions:

postnominal modifiers in the postmodified demonstrative construction are adjoined to DP and typeshifted to a referential or quantificational type, and the demonstrative DP proper is backwards anaphoric to the adjoined modifier. The initial appeal of this approach is that it suggests that the special mode of composition proposed for correlative constructions is not limited to the special syntax of Indo-Aryan correlatives, setting the stage for further research on the crosslinguistic semantics of syntactically productive correlative constructions and their syntactically frozen counterparts in European languages.

A first attempt at an analysis of postmodified demonstratives along these lines is shown below.



- a. $\llbracket 4 \rrbracket = \lambda y. \iota x. \text{person}(x)(s_2) \wedge x = y$
- b. $\llbracket \text{responsible} \rrbracket = \lambda s \lambda x. \text{responsible}(x)(s)$
- c. $\llbracket 6 \rrbracket$ via *iota* = $\iota z. \text{responsible}(z)(s_1)$
- d. $\llbracket 3 \rrbracket = \iota x. \text{person}(x)(s_2) \wedge x = \iota z. \text{responsible}(z)(s_1)$
- e. $\llbracket 2 \rrbracket = \text{insane}(\iota x. \text{person}(x)(s_2) \wedge x = \iota z. \text{responsible}(z)(s_1))(w_1)$
- f. $\llbracket 1 \rrbracket = \lambda s. \text{insane}(\iota x. \text{person}(x)(s_2) \wedge x = \iota z. \text{responsible}(z)(s))(s)$

This strategy appears to get us approximately the desired interpretation. The interpretation of the sentence above entails that the referent of the postmodified demonstrative *that person responsible* is a unique responsible person

and allows *responsible* to be dependent on the situation variable associated with the main predicate, giving the attributive interpretation, while the situation variable in the syntactic scope of the demonstrative determiner is free. However, on closer inspection, the correlative strategy creates problems having to do with uniqueness.

While Dayal and Bhatt argue that relative clauses in correlative constructions are interpreted as definite descriptions, this leads to unwanted uniqueness implications in the postmodified demonstrative construction. Consider (94) below.

- (94) Those students who are interested in event semantics should take the semantics seminar.

Applying the correlative mode of composition blindly, we interpret *who are interested in event semantics* as a definite description denoting the maximal group of individuals who are interested in event semantics and take *those students* to be anaphoric to the derived definite description. This predicts that all of the individuals interested in event semantics are also students—otherwise an anaphoric link cannot be established. But (94) is perfectly consistent with a scenario in which there are also some professors who are interested in event semantics. Intuitively, the sentence entails that the set of students being referred to are the maximal set of students who are interested in event semantics, but not that this exhausts the set of individuals interested in event semantics.

Perhaps the problem could be avoided by assuming that the postnominal modifier in the postmodified demonstrative is interpreted as an *indefinite* description—more precisely, as an unmarked indefinite that carries no uniqueness, nonuniqueness, familiarity or novelty conditions. (See Hawkins (1991))

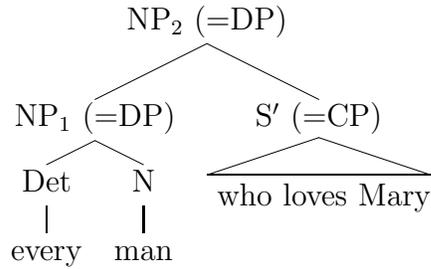
and Farkas (2002, 2005) for arguments that some indefinite descriptions in English are unmarked in this sense.) Partee's (1986) *lower* typeshift will have this effect (alternatively, the modifier could be shifted to a generalized quantifier via *A*). The typeshifted relative clause in (94) then need not refer to the maximal set of individuals who are interested in event semantics. It need only introduce a plural individual that can serve as the antecedent for *those students*.

But this only introduces the opposite problem. If the postnominal modifier is interpreted as an indefinite description, it can refer to a proper subset of the individuals satisfying its content, resulting in a weaker uniqueness implication than we actually observe. For example, the indefinite analysis predicts (95) below to be felicitous, just like (96), but it is not.

- (95) That person responsible for the disaster was fired. He applied for unemployment assistance. #Another person responsible for the disaster was promoted.
- (96) A person responsible for the disaster was fired. That person/He applied for unemployment assistance. Another person responsible for the disaster was promoted.

Because the correlative mode of interpretation introduces more problems than it solves here, let's consider the second possible strategy, which relies on Bach and Cooper's (1978) semantics for high-adjoined relative clauses. Bach and Cooper argue that noun phrases (DPs in the terminology of this dissertation) can optionally take an extra property argument, which is saturated by the denotation of a high-adjoined relative clause and intersected with the property contributed by the content of the noun phrase. This strategy is illustrated below.

(97)



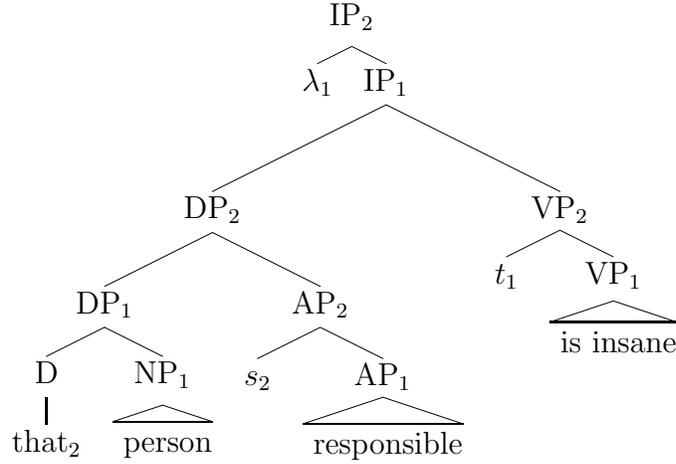
- a. $\llbracket \text{NP}_1 \rrbracket = \lambda R \lambda P [(\forall x)[\text{man}(x) \wedge R(x)] \rightarrow P(x)]$
- b. $\llbracket \text{S}' \rrbracket = \lambda z[\text{love}(z, m)]$
- c. $\llbracket \text{NP}_2 \rrbracket = \lambda P [(\forall x)[\text{man}(x) \wedge \text{love}(x, m)] \rightarrow P(x)]$

Because Bach and Cooper assume that this special interpretive strategy can be used whenever it is needed—it can be applied multiple times to accommodate stacked relatives, for example—it amounts to an optional typeshifting operation, converting a generalized quantifier (type $\langle\langle et \rangle, t\rangle$) into a function of a type $\langle\langle et \rangle, \langle\langle et \rangle, t\rangle\rangle$. In order to apply this strategy to postmodified demonstratives, I use a variation which converts an expression of type $\langle e \rangle$ to type $\langle\langle et \rangle, e\rangle$. The intuition is the same: the operation adds a property argument. The Bach and Cooper strategy avoids the uniqueness problems that the correlative strategy faces because the postnominal modifier is not treated as a referential phrase, and we therefore don't need to worry about the uniqueness or nonuniqueness implications of the modifier.

The application of the Bach and Cooper-style strategy to a postmodified demonstrative is shown below.

(98) That person responsible is insane.

(99)



- a. $[[DP_1]] = \iota x.\text{person}(x)(s_2)$
- b. $\text{Bach-Cooper}([DP_1]) = \lambda R.\iota x.\text{person}(x)(s_2) \wedge R(x)$
- c. $[[AP_2]] = \lambda y.\text{responsible}(y)(s_2)$
- d. $[[DP_2]] = \iota x.\text{person}(x)(s_2) \wedge \text{responsible}(x)(s_2)$
- e. $[[IP_2]] = \lambda s.\text{insane}(\iota x.\text{person}(x)(s_2) \wedge \text{responsible}(x)(s_2))(s)$

In this example, the postnominal modifier *responsible* introduces the situation variable s_2 and the demonstrative itself is interpreted relative to s_2 . Something must be said, of course, about the interpretation of s_2 . Because it is a free variable, its value is set by a contextually given assignment function. In principle, we might imagine this value being many improbable things, but in practice, the values of free variables are relatively constrained. The value of s_2 cannot be set to the value of the situation variable associated with the VP because that would conflict with the presupposition of the demonstrative determiner. However, just as a free individual variable denotes an individual that is part of the evaluation situation, the free situation variable denotes a situation that is a subpart of the evaluation situation. So s_2 in (99) gives us a proper subpart of the value of the bound situation variable. So far so good, but

which subpart? I assume that situations, like discourse referents, cannot be invented out of whole cloth, and if (99) is uttered out of the blue, the context will not supply a situation variable whose value has previously been made salient. This leaves just one option, which is to construct a new situation on the basis of the semantic value of some constituent of (99). Suppose, then, that s_2 is constructed from the semantic value of the modifier it is adjoined to. In other words, s_2 is the minimal proper subpart of the value of the bound situation variable corresponding to the (entire) denotation of the predicate *responsible*. This value of s_2 is the most plausible value to construct for the variable in the circumstances, and it is also the value will give us the correct interpretation of (99). Because s_2 covaries with the situation variable associated with the VP, it gives us an attributive reading of the demonstrative description; because it is a non-default situation, the demonstrative determiner is licensed; because s_2 contains all of the responsible individuals in the situation associated with the VP, the demonstrative description has the correct uniqueness implications.

4.4 Opaque demonstratives

The analysis of attributive postmodified demonstratives predicts that postnominal modifiers will also license opaque interpretations of demonstratives. In this section I first verify that opaque readings of demonstrative descriptions are licensed by the same class of modifiers that license attributive readings in extensional contexts, and then show that the analysis developed above makes the right predictions about these facts.

4.4.1 Licensing

I will use two strategies to bring out the opaque reading, or lack of an opaque reading, of demonstrative descriptions. First, I use a strategy established by Fodor (1970) and Stalnaker (1970) to construct sentences which are false or contradictory on the transparent reading of the relevant description, and true or plausible on the opaque reading. For example, the transparent reading of *that person who discovered fire* in (100) results in the probably contradictory (or at least metaphysically questionable) proposition that a particular person might have been somebody else, while the opaque reading results in the perfectly plausible proposition that someone other than the actual discoverer of fire might have discovered fire. Since (100) has the sensible interpretation, we can conclude that the postmodified demonstrative in subject position allows an opaque reading. The unmodified demonstrative in (101), by contrast, has only the implausible or contradictory reading, showing that unmodified demonstratives, as expected, have only a transparent interpretation. Similarly, (102) has a reading claiming that a Democrat might have won the election, showing that the postmodified demonstrative has an opaque interpretation, while the unmodified demonstrative in (103), which only has a transparent reading, causes (103) to express the proposition that George W. Bush could have been a Democrat.

- (100) That person who discovered fire might have been someone else.
- (101) # That discoverer of fire might have been someone else.
- (102) That presidential candidate who won the 2004 election could have been a Democrat.
- (103) That winner of the presidential election could have been a Democrat.

One danger of this strategy is that it tends to lead to the construction of copular clauses, whose special interpretations might interfere. But as the results of this strategy are confirmed by the other strategy I use here, we need not be overly concerned.

To bias a description in an attitude ascription toward an opaque interpretation, we can set up a context in which the attitude holder cannot identify the object of the description and in which the description is essential to the attitude being described. For example, the text in (104) below is coherent only if the description *scientist who discovered stem cells* is opaque. The text in (105) is incoherent, indicating again that unmodified demonstrative descriptions must be transparent.

- (104) Seymour wants to interview that scientist who first cloned stem cells, although he doesn't know who that is, because he is interested in stem cell research.
- (105) # Seymour wants to interview that discoverer of stem cells, although he doesn't know who that is, because he is interested in stem cell research.

These two diagnostics show that nonrestrictive relative clauses do not license opaque interpretations of demonstrative descriptions. Examples (106–107) below have only the implausible reading arising from the transparent interpretation of the subject, and (108) is incoherent.

- (106) # That prehistoric individual, who discovered fire, might have been someone else.
- (107) # That presidential candidate, who won the election, might have been a Democrat.
- (108) # Seymour wants to interview that scientist, who discovered stem cells, although he doesn't know who that is, because he is interested in stem cell research.

Complements of N also do not license opaque readings of demonstratives, since (109–111) are equally unacceptable:

- (109) # That discoverer of fire might have been someone else.
- (110) # That winner of the election might have been someone else.
- (111) # Seymour wants to interview that inventor of the internet, although he doesn't know who that is, because he is interested in the history of computer networks.

On the other hand, amount relatives and relatives abstracting over kinds license opaque interpretations. Examples (112–114) below have the sensible reading arising from the opaque interpretation of the subject, and (115) is a coherent discourse.

- (112) Those candidates that there were on the ballot could have been different people.
- (113) Those candidates that there were on the ballot could have been more numerous.
- (114) If technology had advanced more quickly, those telephones that there were in my grandmother's time might have been wireless.
- (115) Seymour wants to profile those woodpeckers that there are in Alabama, although he isn't sure what species they are, because he is interested in the hunt for the ivory-billed woodpecker.

PPs and postnominal APs also license opaque readings of demonstratives, as shown by the acceptability of (116–122):

- (116) That person at the top of the list could have been someone else.
- (117) That runner in last place could have been someone else.
- (118) Given the run-down state of the equipment, that person responsible for the disaster could easily have been someone else.
- (119) That person responsible could have been someone else.
- (120) If the cloud cover had been different, those stars visible could have been different stars.

- (121) Seymour wants to interview that bicyclist in last place in the Tour de France, although the last bicyclists haven't come in yet, because he is interested in anyone who can finish the Tour de France.
- (122) John wants to vote for those politicians faithful to their principles, although he doesn't know who they are, because he is very idealistic.

Prenominal adjectives do not license opaque interpretations, even if we're careful to force a stage-level interpretation of the adjective. As a result, (123–125) are unacceptable.

- (123) #Those helpful tour guides could have been different people.
- (124) #Given the run-down state of the equipment, that responsible irresponsible person could have been someone else.
- (125) #Seymour wants to interview that responsible irresponsible person, although he doesn't know who is to blame, because he is interested in the events leading up to the disaster.

Postnominal superlatives license opaque interpretations and prenominal superlatives do not. Examples (126) and (128) below, which contain postnominal superlatives, are acceptable, while the sentences with the corresponding prenominal superlatives in (127) and (129) are not:

- (126) That member of the American Academy of Sciences who is youngest might have been someone else.
- (127) # That youngest member of the American Academy of Sciences might have been someone else.
- (128) Seymour wants to interview that member of the American Academy of Sciences who is youngest, although he doesn't know who that is, because he is interested in young achievers in the sciences.
- (129) # Seymour wants to interview that youngest member of the American Academy of Sciences, although he doesn't know who that is, because he is interested in young achievers in the sciences.

Infinitival relatives that depend on prenominal superlatives or ordinals do not license opaque interpretations, while independent infinitival relatives do. Therefore, (130) and (132) are unacceptable, in contrast with (131) and (133):

- (130) # That first hominid to discover fire could have been someone else.
- (131) Those men to be shipped elsewhere could have been different people.
- (132) # Seymour wants to interview that youngest member to be elected to the American Academy of Sciences, although John doesn't know who that is, because John is interested in young achievers in the sciences.
- (133) Seymour wants to interview those soldiers to be kept in Iraq for a third tour, although John doesn't know who they are, because John is interested in the effects of the Iraq war on the American military.

Finally, participial reduced relatives license opaque interpretations, as shown by the acceptability of (134–137):

- (134) Those students writing a term paper could have been the other half of the class.
- (135) Those articles read by the students could have been different papers.
- (136) Seymour wants to interview those soldiers guarding the Iraqi Prime Minister, although John doesn't know who they are, because John wants an inside view on Iraqi politics.
- (137) Seymour wants to interview those Londoners injured in the subway bombing, although John doesn't know who they are, because John is interested in the effects of terrorism on English life.

The analysis developed so far predicts that the same class of modifiers will license opaque and attributive readings of demonstratives. This is exactly what we have found. Just like attributive demonstratives, opaque demonstratives are licensed by postnominal modifiers of any category, and not by complements of N, prenominal modifiers, or constituents depending on prenominal modifiers.

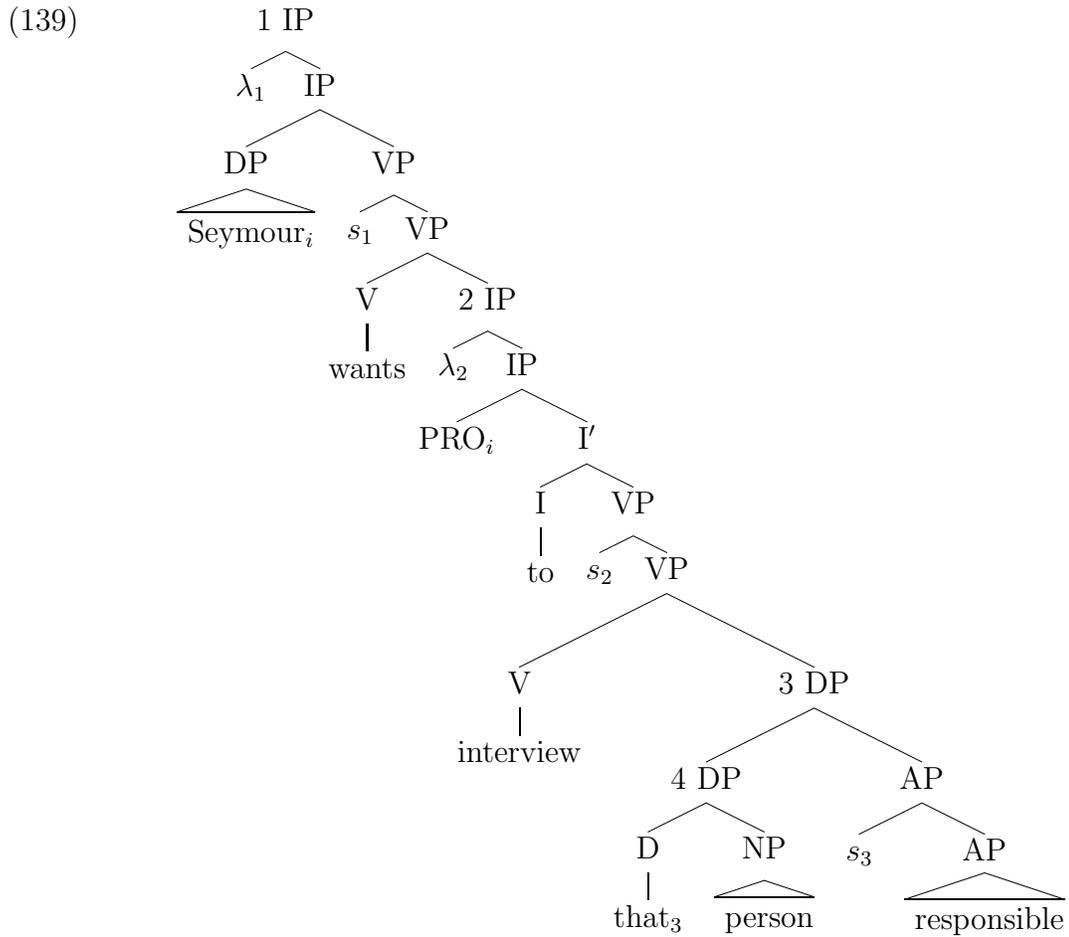
4.4.2 Analysis

The analysis already developed predicts this cluster of facts—nothing more needs to be added. Ordinary (non-anaphoric) demonstratives are stubbornly transparent, because their situation variables must be non-default and thus

cannot be bound by intensional operators. A postnominal modifier adjoined to DP introduces a situation variable which denotes a proper subpart of the situation bound by the intensional operator. The semantic value of the NP in a postmodified demonstrative is relativized to the situation introduced by the postnominal modifier. Because that situation is a subpart of the situations quantified over by the intensional operator, the referent of the demonstrative covaries with the situations quantified over and the demonstrative takes narrow scope under the intensional operator.

The opaque interpretation of a postmodified demonstrative is derived below. (I have glossed over some complications relating to the interpretation of *want*.)

(138) Seymour wants to interview that person responsible.



(140) $\llbracket 4 \rrbracket = \iota x.\text{person}(x)(s_3)$

(141) $\text{Bach-Cooper}(\llbracket 4 \rrbracket) = \lambda R.\iota x.\text{person}(x)(s_3) \wedge R(x)$

(142) $\llbracket 3 \rrbracket = \iota x.\text{person}(x)(s_3) \wedge \text{responsible}(x)(s_3)$

(143) $\llbracket 2 \rrbracket = \lambda s.\text{interview}(\text{Seymour}, \iota x[\text{person}(x)(s_3) \wedge \text{responsible}(x)(s_3)])(s)$

(144) $\llbracket 1 \rrbracket = \lambda s.\forall s' \in \text{Bul}_{\text{Seymour}}(s).$
 $\text{interview}(\text{Seymour}, \iota x[\text{person}(x)(s_3) \wedge \text{responsible}(x)(s_3)])(s')$

4.5 Conclusion

This chapter has extended the core analysis of demonstrative determiners developed in chapter 3 to attributive and opaque demonstrative descriptions. The primary empirical contribution has been to show that attributive and opaque interpretations of demonstrative descriptions, largely ignored in the literature, are well attested and are licensed by postnominal modifiers. The primary analytical contribution has been the claim that postnominal modifiers support the establishment of a (sub)situation, which allows covariation with a bound situation variable while satisfying the demonstrative determiner's requirement that the descriptive content be interpreted relative to a non-default situation. This proposal provides new support for Dayal's (1998, 2004) research program linking licensing by modification to the modal independence of postnominal modifiers. It also provides further support for the position that demonstrative determiners constrain the modal anchoring of their descriptive content.

The analysis presented in this chapter completes the account of the semantics and pragmatics of demonstrative determiners. In the next chapter I apply the account to demonstrative pronouns.

Chapter 5

Demonstrative Pronouns

5.1 Introduction

The previous chapters have concentrated on the interpretation of demonstrative determiners and the place of demonstrative descriptions in the semantic typology of noun phrases. In this chapter I extend the account to demonstrative pronouns. Demonstrative pronouns are homophonous with demonstrative determiners in English and many other languages, and an obvious question to ask is whether corresponding demonstrative determiners and pronouns have the same lexical meanings as well. I argue that the answer is yes, that is, that demonstrative pronouns require uniqueness relative to non-default situations. I also argue that third person pronouns have meanings that are parallel to the semantics of the definite article in that they require uniqueness and are interpreted relative to non-default situations. This leaves us with a typology of definite noun phrases (setting aside proper names) which depends on two primary distinctions: the presence versus absence of descriptive content and

relativization to default versus non-default situations.

(1) Classification of definite noun phrases

	default situation	non-default situation
descriptive content	definite descriptions	demonstrative descriptions
no descriptive content	personal pronouns	demonstrative pronouns

If personal and demonstrative pronouns have the same lexical semantics as determiners, as I will argue in this chapter, then each pronoun has a property argument but no (overt) NP complement to saturate it. At first glance, the hypothesis that a personal or demonstrative pronoun has a property argument seems to commit us to an E-type analysis of pronouns. Indeed, one possible assumption to make, as in standard E-type analyses, is that demonstrative pronouns have covert descriptive content that is provided either by the context or by a nominal antecedent. However, Heim (1990) has shown that if the “descriptive content” of a pronoun is chosen carefully enough, the resulting analysis makes the same predictions as an analysis in which pronouns are taken to denote variables. So the superficially E-type approach suggested by the hypothesis that demonstrative pronouns and determiners are equivalent can also replicate a variable-based approach, and does not commit us to a full-fledged E-type analysis. One possible assumption on this line of thinking is that the property argument is saturated with a completely uninformative property like $\lambda x. x \in D_e$ (as Elbourne (2005) proposes for certain uses of personal pronouns). We could also assume that the property argument is saturated with a property having to do with contextual salience, and arrive at the counterpart of Roberts’s (2004) analysis of personal pronouns. I will adopt the last

assumption—that the property argument of demonstrative pronouns is saturated with a property having to do with contextual salience—and argue that it makes correct predictions about the distribution of demonstrative and personal pronouns.

The initial hypotheses about pronoun meanings are summarized informally in (2–4) below, and some hypothesized pronoun meanings are given in (5–7).

- (2) *Pronouns and uniqueness*: Personal and demonstrative pronouns require uniqueness relative to a situation.
- (3) *Demonstrative and non-default situations*: Demonstrative pronouns require interpretation relative to a non-default situation.
- (4) *Descriptive content vs. salience*: Definite and demonstrative pronouns are sensitive to salience.
- (5) $\llbracket it_n \rrbracket$: defined iff $\text{most-salient}(s_n)$ is a singleton set.
If defined, denotes $\iota x.\text{most-salient}(x)(s_n)$.
- (6) $\llbracket that_n \rrbracket$ (pronoun): defined iff $\text{most-salient}(s_n)$ is a singleton set and s_n is a non-default situation.
If defined, denotes $\iota x.\text{most-salient}(x)(s_n)$.
- (7) $\llbracket this_n \rrbracket$ (pronoun): defined iff $\text{most-salient}(s_n)$ is a singleton set, s_n is a non-default situation, and $\iota x.\text{most-salient}(x)(s_n)$ is proximal to the speaker.
If defined, denotes $\iota x.\text{most-salient}(x)(s_n)$.

The personal pronouns *he* and *she* mark natural gender, a distinction that is not realized in the determiner system. Following Schlenker (2003) and others, I take the gendered personal pronouns to bear additional presupposition-inducing semantic features, as shown below.

- (8) $\llbracket he_n \rrbracket$: defined iff $\text{most-salient}(s_n)$ is a singleton set and $\iota x.\text{most-salient}(x)(s_n)$ is male.
If defined, denotes $\iota x.\text{most-salient}(x)(s_n)$.
- (9) $\llbracket she_n \rrbracket$: defined iff $\text{most-salient}(s_n)$ is a singleton set and $\iota x.\text{most-salient}(x)(s_n)$ is female.
If defined, denotes $\iota x.\text{most-salient}(x)(s_n)$.

The initial hypothesis, then, is that personal pronouns differ from the definite article in only two respects: their property argument is saturated with a property relating to contextual salience, and some personal pronouns bear presupposition-triggering gender features.

The fact that pronouns lack descriptive content raises an empirical challenge as well as the theoretical challenge of saturating the property argument of the determiner denotations. Personal and demonstrative pronouns can refer to a wide range of entities, including individuals, events, and propositions. Because pronouns lack overt descriptive content, it is sometimes difficult to be sure what sort of entities they refer to. Consider (10) below. Does the pronoun *it* in the second sentence refer to the new operating system, the event of creating a new operating system or the proposition that certain programmers have designed a new operating system?

- (10) Programmers at Apple have designed a completely new operating system. You can read about it in the latest issue of *MacWorld*.

I will avoid using indeterminate examples like (10), relying whenever possible on predicates that select for arguments of a particular sort (e.g., the object of *believe* is propositional, while the subject of *happen* is an event or a property of events; see Asher (1993) for discussion).

Referents of different sorts raise different puzzles for the interpretation of pronouns, so this chapter is organized around pronouns referring to entities of different sorts. I begin in section 5.2 by discussing demonstrative pronouns that are used to refer to abstract objects. Although the examples concerning pronominal reference to abstract objects are somewhat difficult, the analysis of these pronouns turns out to be relatively straightforward. I argue that once

the right assumptions are made about the natural language metaphysics of abstract objects, the analysis of demonstrative determiners as it stands accounts for the distribution of both demonstrative descriptions and demonstrative pronouns that refer to abstract objects. I then turn in section 5.3 to demonstrative pronouns that are used to refer to concrete objects. Here, the challenge is that pronouns are sensitive to animacy in ways that descriptions are not. Animacy restrictions on personal and demonstrative pronouns lead me to a slight modification of the original hypothesis, but I argue that the core analysis of determiner meanings also makes correct predictions about the distribution of pronouns used to refer to concrete objects.

5.2 Reference to abstract objects

The singular demonstrative pronouns *this* and *that* and the neuter personal pronoun *it* can refer to abstract objects like propositions, as shown in (11) below, events, as shown in (12), and event-types, as shown in (13).

- (11) It's raining.
 - a. John knows this/that/it.
 - b. This/That/It surprises John.
- (12) This morning John read the newspaper.
 - a. This/That/It happened at before breakfast.
 - b. This/That/It took an hour.
- (13) Today John passed his final exam.
 - a. This/That/It happened to Mary, too.
 - b. Mary did this/that/it too.

In order to account for the interpretation of pronouns that refer to events and propositions, we must make one of two assumptions. One possible assump-

tion is that *it* and demonstrative pronouns can denote a variety of semantic types. The other is that *it* and demonstrative pronouns consistently denote entities, but that the domain of entities includes abstract objects like events and propositions in addition to more familiar concrete objects like individuals and groups. Following Asher (1993), I make the latter assumption.

In principle, it is possible to make many fine distinctions among different sorts of abstract objects. Work on aktionsart (see, e.g., Dowty 1979, Smith 1997) can be used to justify distinctions among different sorts of eventualities, such as states, activities and so on. Asher (1993) proposes a similarly fine-grained typology of proposition-like abstract objects. These typologies are relevant to the lexical semantics, and to some extent the syntactic selection properties, of predicates that select arguments of a particular sort. For my purposes, however, it is only necessary to appeal to the most basic distinction in the domain of abstract objects, namely that between eventualities and propositions. This distinction is deeply ingrained in semantic theory, and standard assumptions lead me to the position that event-like entities and proposition-like entities are introduced into the discourse in different ways. (I will ignore states in what follows.) The analysis I develop below is, of course, consistent with a more fine-grained typology of abstract objects.

The main analytical challenge in this domain is to describe how abstract objects are established in the discourse. I will use the by now familiar strategy of separating deictic, anaphoric and inferable uses of pronouns that are used to refer to abstract objects. Once we understand how abstract objects are introduced, we will see that the distribution of personal and demonstrative

pronouns that refer to abstract objects follows from the analysis developed in the preceding chapters.

5.2.1 Deictic reference to abstract objects

The pronouns *it*, *that* and *this* can refer to abstract objects that are identified in the physical surroundings of the utterance. The pronouns in (14) refer deictically to events, those in (15–16) to event types, and those in (17) to propositions.

- (14) [viewing starting line of marathon]
 - a. It will last for hours.
 - b. That will last for hours.
 - c. This will last for hours.
- (15) [watching an actor stumble on stage]
 - a. It would never happen to me.
 - b. That would never happen to me.
- (16) [speaker stumbles on stage, during a rehearsal]
 - a. This won't happen during the performance.
- (17) [viewing an all-red electoral map]
 - a. It surprises me!
 - b. That surprises me!
 - c. This surprises me!

In order to account for these examples, I assume that the situation corresponding to the context of utterance is freely populated with abstract objects identified by the discourse participants. Of course, we expect some indeterminacy in just which abstract objects are in the situation corresponding to the context of utterance, since their presence depends on whether or not they are recognized by the discourse participants.

Recall the initial hypothesis about the interpretation of *it* and *that*, repeated below. Note that *it* is expected to be interpreted relative to a default situation for the same reason that definite descriptions are.

- (18) $\llbracket it_n \rrbracket$: defined iff $\text{most-salient}(s_n)$ is a singleton set.
If defined, denotes $\iota x.\text{most-salient}(x)(s_n)$.
- (19) $\llbracket that_n \rrbracket$ (pronoun): defined iff $\text{most-salient}(s_n)$ is a singleton set and s_n is a non-default situation.
If defined, denotes $\iota x.\text{most-salient}(x)(s_n)$.

The working hypothesis predicts that a demonstrative pronoun may refer to an abstract object that is the most salient entity in a non-default situation, while *it* may refer to an abstract object that is the most salient entity in a default situation such as the situation corresponding to the discourse context. It's not entirely clear that these conditions are satisfied in (14–17). For instance, do we really want to assume in (17) that the map is less salient than the proposition that the map is all red?

Changing our assumptions about how the property argument of a pronoun is saturated doesn't necessarily help. Suppose that instead of assuming that pronouns are sensitive to salience, we took the property argument of a pronoun to be saturated with the uninformative property of being an entity. Then we'd predict deictic uses of *it* to be licensed just in case the context of utterance contained a unique entity, which on standard assumptions is guaranteed not to hold: the context of utterance minimally contains a speaker, an addressee and a spatiotemporal location, that is, more than one entity.

Perhaps it is already clear what piece of the story is missing. We know that predicates place selectional restrictions on the sort of their arguments. If the uniqueness requirements of the pronouns apply only relative to entities

satisfying the selectional restrictions of the predicates, then we will end up with more sensible uniqueness requirements. The predicate *last for hours* selects events, so an *it* subject of this predicate requires that there is a unique most salient event relative to the context of utterance, while a demonstrative pronoun subject requires that there is a unique most salient event relative to a salient non-default situation. The predicate *happen* can select event-types, in which case *it* as subject of *happen* requires that there is a unique most salient event-type relative to the context of utterance, while a demonstrative pronoun subject of *happen* requires that there is a unique most salient event-type relative to a salient non-default situation. And so on. In general, I will assume that the uniqueness condition imposed by definite Ds is enforced relative to the set of entities satisfying any other presuppositions in the sentence.

The view that the uniqueness condition on definite noun phrases interacts with other presuppositions in the sentence may appear to be a move away from the principle of compositionality. That is, on the assumption that pronouns denote type $\langle e \rangle$, we might expect the referent of a pronoun to be calculated entirely on the basis of DP-internal lexical and compositional semantics. Certainly that is what the standard static formalization that I have adopted suggests when taken at face value. However, the view sketched above is fully compatible with dynamic frameworks, in which the role of a (nonquantificational) determiner is to place constraints on the value of a variable. (See Farkas (1997a, 2002) for discussion.) In these frameworks it would not be surprising for the value of a type- $\langle e \rangle$ DP to be constrained by interacting restrictions introduced by the determiner and the main predicate. The effect of this in-

teraction can also be incorporated into a static framework by assuming that the property argument of a pronoun is sensitive to presuppositions elsewhere in the sentence.

Although we did not see evidence earlier that the uniqueness condition on definite noun phrases with descriptive content was sensitive to presuppositions introduced by the main predicate, we should note that there is also no evidence that the uniqueness condition on descriptions is *insensitive* to the presuppositions of the main predicate. This is because overt descriptive content, unless it is so vague that it is pragmatically odd, has its own entailments about the sort of the referent. For example, the nominal *race* below entails that the referent of the definite description is an event, matching the selectional restriction imposed by the main predicate.

(20) The race lasted for hours.

Whether we assume that the uniqueness condition on the definite description in (20) is interpreted only relative to entities satisfying the selectional restrictions of the main predicate or that the uniqueness condition is interpreted relative to all entities in the relevant situation, we will make the same predictions.

With the amendment to the uniqueness condition in mind, let's consider what predictions the analysis makes about the distribution of pronouns referring to abstract objects. In previous chapters, we saw that explicit contrast supports the establishment of subparts of the discourse context. So we expect demonstrative pronouns to be preferred in explicitly contrastive contexts, which is indeed the case:

- (21) [TV 1 shows a congressional debate. TV 2 shows a swimming race. Speaker points to TV 1, then to TV 2.]
- a. THAT/THIS will last for hours, and THAT/THIS will be over in a few minutes.
 - b. # IT will last for hours, and IT will be over in a few minutes.
- (22) [A gymnast executes a series of flips. Speaker points to two moves in succession.]
- a. I can do THAT/THIS, but not THAT/THIS.
 - b. # I can do IT, but not IT.
- (23) [TV 1 shows scenes of fighting in Baghdad. TV 2 shows Palestinian and Israeli leaders signing a treaty. Speaker points to TV 1, then to TV 2.]
- a. THAT/THIS doesn't surprise me, but I find THAT/THIS very surprising.
 - b. # IT doesn't surprise me, but I find IT very surprising.

The contexts in (21–23) contain more than one event, event type and proposition, respectively. The explicit contrast and speaker demonstrations set up parallel subsituations, each containing a unique abstract object satisfying the selectional restrictions of the relevant predicate. On the account I have proposed, we correctly predict the third person pronoun *it* to be unacceptable here and the demonstrative pronouns to be fine. Of course, these examples suggest an alternate explanation based on prosody. Perhaps *it* is simply incompatible with the contrastive focus required by the explicit contrast. I argue below that *it* is compatible with contrastive focus after all, but for the time being, let's consider additional contexts which are less susceptible to a prosodic account.

In previous chapters we also saw that speaker demonstrations establish non-default situations. So demonstrative pronouns should be able to refer to abstract objects in virtue of speaker demonstrations. If an abstract object is unique in the situation corresponding to the speaker demonstration but not in

the context of utterance, then a demonstrative should be preferred. Again, this is just what we find, as shown below.

- (24) [We are viewing an X-ray video of the vocal apparatus. Speaker points at a gesture of the tongue.]
- a. That/This lasted for less than 100 ms.
 - b. # It lasted for less than 100 ms.
- (25) [In the middle of an elaborate sonata, a violinist holds a trill for a beat too long, and the speaker waves at the violinist.]
- a. I would never do that.¹
 - b. # I would never do it.
- (26) [Speaker holds up a contract and points at one of the clauses in fine print.]
- a. That/This surprises me.
 - b. # It surprises me.

The intended referents of the pronouns in the above examples are not independently salient or unique in the context of utterance, and the speaker demonstrations are crucial in identifying them. It is not surprising, then, that a demonstrative is required. Notice as well that the above examples have the same structure and prosody as the examples in (14–17), in which *it* and demonstrative pronouns are interchangeable. This shows that a prosodic constraint, by itself, does not account for the full range of facts.

One loose end to address here is why, in examples like (14–17), demonstrative pronouns and *it* appear to be interchangeable. If the account of definite and demonstrative determiners is extended to definite and demonstrative pronouns, we expect a markedness relation to hold between the less marked pronoun *it* and the more marked demonstrative pronouns. When the less marked pronoun refers successfully, we expect it to be preferred. So contexts in which *it* and

¹*This* is unacceptable in this example because the proximity requirement is not satisfied.

demonstrative pronouns are apparently interchangeable are perhaps surprising. But the apparent free variation in (14–17) is also similar to an effect we saw with deictic uses of descriptions. As we saw before, the contents of the context of utterance are not fully determined. Rather, they depend on the assumptions the discourse participants make about what elements of the context are salient enough to have been noticed by all participants. In examples like (14–17), we expect speakers to use *it* just in case they assume that the addressee has noticed (and is fully focused on) the event or proposition that the speaker is referring to. We expect speakers to use a demonstrative pronoun if there is some doubt as to whether the addressee has noticed the intended referent.

Demonstrative descriptions that refer deictically to abstract objects behave similarly to demonstrative pronouns, and definite descriptions behave similarly to *it*, providing further confirmation that the approach is on the right track. When an abstract description refers to an abstract object that is identifiable only in virtue of a speaker demonstration, a demonstrative description is preferred, as shown in (27–29). Abstract demonstrative descriptions are also preferred in contrastive environments, as shown in (30–32).

- (27) [We are viewing an X-ray video of the vocal apparatus. Speaker points at a gesture of the tongue.]
- a. That event/This event lasted for less than 100 ms.
 - b. # The event lasted for less than 100 ms.
- (28) [In the middle of an elaborate sonata, a violinist holds a trill for a beat too long, and speaker waves at the violinist.]
- a. I would never make that mistake.²
 - b. # I would never make the mistake.

²*This* is unacceptable in this example because the proximity requirement is not satisfied.

- (29) [Speaker holds up a contract and points at one of the clauses in fine print.]
- a. That clause/This clause surprises me.
 - b. # The clause surprises me.
- (30) [TV 1 shows a congressional debate. TV 2 shows a swimming race. Speaker points to TV 1, then to TV 2.]
- a. That event/This event will last for hours, and that event/this event will be over in a few minutes.
 - b. # The event will last for hours, and the event will be over in a few minutes.
- (31) [A gymnast executes a series of flips. Speaker points to two moves in succession.]
- a. I can do that thing/this thing, but not that thing/this thing.
 - b. # I can do the thing, but not the thing.
- (32) [TV 1 shows scenes of fighting in Baghdad. TV 2 shows Palestinian and Israeli leaders signing a treaty. Speaker points to TV 1, then to TV 2.]
- a. That circumstance/This circumstance doesn't surprise me, but I find that circumstance/this circumstance very surprising.
 - b. # The circumstance doesn't surprise me, but I find the circumstance very surprising.

Abstract descriptions whose referents can potentially be taken to be the unique abstract object of the relevant sort in the context of utterance allow the definite article; since these examples depend on the pragmatically determined extent of the context of utterance, definite and demonstrative descriptions appear to be interchangeable.

- (33) [viewing starting line of marathon]
- a. The event will last for hours.
 - b. That event will last for hours.
 - c. This event will last for hours.
- (34) [watching several members of the corps de ballet be sidelined with sprained ankles]
- a. The problem would never happen to me.
 - b. That problem would never happen to me.

- (35) [speaker stumbles on stage, during a rehearsal]
 a. This problem won't happen during the performance.
- (36) [viewing an all-red electoral map]
 a. The outcome surprises me!
 b. That outcome surprises me!
 c. This outcome surprises me!

Summing up, we have found that events, event types and propositions in the physical context of utterance support the establishment of abstract objects in corresponding situations. The working hypothesis that demonstrative pronouns are semantically equivalent to demonstrative determiners and that *it* is semantically equivalent to the definite article is confirmed for pronouns that are used to refer to abstract objects in the context of utterance.

5.2.2 Anaphoric and inferred reference to abstract objects

The pronouns *it*, *that* and *this* can also be used to refer to abstract objects evoked by linguistic constituents in the preceding discourse. Here it is important to recognize that there is more than one way to introduce an abstract object into the discourse context by linguistic means.

Proposition- and event-denoting pronouns can of course have abstract nominal antecedents. Straightforward examples of this type are shown below.

- (37) a. The House minority leader made *a controversial claim_i*.
 b. It_i was strongly contested by several representatives.
 c. Then the Speaker of the House made *an equally controversial claim_j*.
 d. That_j was accepted with no debate.
- (38) a. *The most exciting event in the Olympics_i* took place on the first day.

- b. It_i lasted for less than an hour.
- c. *The least exciting event*_j took place on the last day.
- d. That_j dragged on for half the day.

However, as we have already seen, proposition- and event-denoting pronouns need not have nominal antecedents. For example, the pronouns in (39) below refer to the event described by the preceding verb phrase, those in (40) refer to the event-type described by the preceding verb phrase, and those in (41) refer to the proposition described by the preceding sentence.

- (39) John ran around the track four times.
 - a. This/That/It took fifteen minutes.
 - b. Mary saw this/that/it.
- (40) John passed his final exam.
 - a. This/That/It happened to Mary too.
 - b. Mary did this/that/it too.
- (41) Helen Keller was a radical Socialist.
 - a. Most schoolchildren don't know this/that/it.
 - b. This/That/It surprised me.

The existence of pronouns such as those in (39–41) is not surprising. We know that sentences express propositions, so once we admit proposition-like abstract entities into the domain of discourse, we expect a sentence to support the introduction of a corresponding proposition-like discourse referent. It is also commonly assumed that eventive predicates like *run* have an event argument, so once we admit event-like abstract objects into the domain of discourse, we also expect eventive predicates to support the introduction of event-like discourse referents.

If every clause introduces a proposition-like abstract entity of the same status and every verb introduces an event-like entity, then longer discourses

should allow for multiple interpretations of abstract pronouns. Sometimes this prediction is borne out. For example, (42) below contains two clauses, and thus is expected to introduce two proposition-like abstract entities. The pronoun in the following sentence, as predicted, can refer to either of these proposition-like entities.

- (42) John read that Helen Keller was a radical Socialist.
- a. When Mary found out about **it/that/this**, she decided to read Keller's autobiography.
 - b. When Mary found out about **it/that/this**, she asked John where he got his reading list.

The most plausible interpretation of (42a) is that Mary decided to read Keller's autobiography when she found out that Keller was a radical Socialist. That is, the pronoun in (42a) most plausibly refers to the proposition-like entity corresponding to the embedded clause of the preceding sentence. The most plausible interpretation of (42b), on the other hand, is that Mary found out what John had been reading. That is, the abstract pronoun in (42b) most plausibly refers to the proposition-like entity corresponding to the matrix clause of the preceding sentence.

Not every abstract entity that we might expect to be established in the discourse is available as a referent of a pronoun. For example, Asher (1993) observes that in (43) below, the pronoun in the last sentence can refer to the complex proposition described by the entire preceding text and perhaps to the simple proposition described by the most recent preceding clause, but not, say, to the complex proposition described by the first two sentences of the text.

- (43) The "liberation" of the village had been bloody. Some of the Marines had gone crazy and killed some innocent villagers. To cover up the

“mistake,” the rest of the squad had torched the village, and the lieutenant called in an air strike. At first the battalion commander hadn’t believed *it/that/this*. (Asher 1993:49)

Example (44) shows a similar fact about pronouns referring to event-like entities. The pronoun in the final sentence can refer to the complex event described by the entire preceding text, and perhaps to the simple event described by the most recent preceding verb phrase, but not to the event described by the first two sentences.

- (44) First John stretched. Then he ran around the track four times. Finally, he lifted weights in the gym.
a. This/That/It took an hour.

This shows that not all abstract entities have the same status in the discourse. There appears to be a tendency to sum together related propositions and related events to create complex abstract entities.³ The fact that there is a strong preference for pronouns to pick up the complex abstract entities created by summing related propositions and events suggests that these complex abstract entities have a special status in the discourse. Perhaps they are more salient than the simple abstract entities they are made of. That would be consistent with our assumption that pronouns are sensitive to salience.

Notice that the abstract complex entities in (43–44) above are referred to with singular pronouns. Plural pronouns refer to pluralities of abstract objects only under very limited circumstances. A plural pronoun cannot refer to a group of propositions described by a sequence of sentences or a group of events described by a sequence of verb phrases, as shown below:

³Asher (1993) suggests that this sort of summation takes place within discourse chunks, which are identified by various rhetorical relations between sentences.

- (45) Helen Keller was a radical Socialist. Woodrow Wilson was a white supremacist.
 - a. # Most schoolchildren don't know them/those/these.
 - b. # They/Those/These surprised John.
- (46) The people settled down, started tilling crops, and developed a hierarchical social structure.⁴
 - a. # They/Those/These happened within a century.
 - b. # Then the neighboring tribes did them/these/those too.

This suggests that abstract entities do not have a lattice structure like concrete entities do; plural pronouns are then not expected to refer to abstract entities simply because there are no pluralities of events or propositions. Asher (1993), focusing on abstract entities that are introduced by clausal constituents, comes to this conclusion.

On the other hand, plural noun phrases with abstract descriptive content are perfectly acceptable, as shown in (47–48) below, and abstract entities that are introduced by nominal expressions support the use of plural pronouns, as shown in (49–50).

- (47) Helen Keller was a radical Socialist. Woodrow Wilson was a white supremacist.
 - a. Most schoolchildren don't know those facts/these facts.
 - b. Those facts/These facts surprised John.
- (48) The people settled down, started tilling crops, and developed a hierarchical social structure.
 - a. Those changes/These changes happened within a century.
 - b. Then the neighboring tribes made these changes/those changes too.
- (49) The Speaker of the House made a controversial claim at the press conference. Then the House Minority Leader made a contradictory claim.
 - a. The members of the press recorded both of them/those/these without comment.

⁴This example is based on an attested example discussed by Gundel et al. (2003).

- b. They/These surprised no one.
- (50) A surprising event happened this morning. And another even more surprising event happened this afternoon.
- a. They lasted for hours and none of us got any work done.

The evidence from singular pronouns suggested that both clauses and abstract noun phrases like *a claim* and *a fact* supported the introduction of a proposition-like abstract entity into the context, and likewise that both verb phrases and abstract noun phrases like *an event* supported the introduction of an event-like abstract entity. The evidence from plural pronouns suggests that abstract nominal predicates do something else as well: they introduce a lattice structure, thus allowing reference to pluralities of abstract entities. Pluralities of abstract entities do not appear to be formed without the support of an appropriate nominal predicate.

Or are they? McCloskey (1991) observes that mutually incompatible coordinated clauses in subject position trigger plural agreement, as shown in (51). The plural agreement suggests that the propositions introduced by the coordinated subject form a plurality, an observation which is somewhat at odds with the pronoun facts.

- (51) That the president will be reelected and that he will be impeached are/*is equally likely at this point. (McCloskey 1991: ex. (5))

McCloskey also observes that when coordinated clauses denote compatible propositions, singular agreement is preferred, as in (52):

- (52) That UNO will be elected and that sanctions will be lifted is/??are now likely. (McCloskey 1991: ex. (8–9))

In addition to the relation between the coordinated clauses, the choice of predicate influences number agreement. Notice that the main predicate of (51), *be*

equally likely, applies to a group of more than one propositions. Thus, (53) is infelicitous out of the blue:

(53) # That it will rain is equally likely.

And in fact coordinated clauses that denote compatible clauses still require plural agreement with the predicate *be equally likely* (unless of course previous context supplies an additional proposition for comparison):

(54) That UNO will be elected and that sanctions will be lifted are/*is equally likely.

Furthermore, main predicates that are compatible with either atomic propositions or pluralities of propositions allow both singular and plural agreement, as shown below:

- (55) The president has many strong opinions, but is not known for logical consistency.
- a. That the US should not engage in nation-building and that the US must establish democracy in Iraq have been argued by the president in the same speech.
 - b. That the US should not engage in nation-building and that the US must establish democracy in Iraq has been argued by the president in the same speech.

Notice that (55a) and (55b) make slightly different claims. Example (55a) is a claim that the president made two conflicting arguments, while (55b) is a claim that he made a single, internally inconsistent, argument.

These facts suggest that in principle, proposition-like entities that are introduced by clausal constituents can form pluralities, but that such pluralities are not created automatically. Rather, they are constructed when required. Two kinds of circumstances appear to support the construction of a plurality of propositions that have been introduced by clausal constituents: the description

of incompatible propositions that cannot be summed into a coherent complex proposition, and the use of a predicate that allows or requires a plurality of propositions instead of an atomic proposition. Verbal agreement morphology is sometimes argued to be a mere reflex of morphological or syntactic relations (see Kratzer (2005) and Heim (2005) for recent arguments along these lines). The fact that plural agreement with coordinated clausal subjects is affected by these contextual factors strongly suggests that the plural agreement in these sentences reflects semantic plurality rather than being a purely morphosyntactic phenomenon.⁵

There is one final complication in this area: a coordinated subject that triggers plural verbal agreement supports the use of neither singular nor plural pronouns.

- (56) That the president will be reelected and that he will be impeached are equally likely at this point.
- a. * However, they/those/these are (both) fairly unlikely.
 - b. * However, it/that/this is fairly unlikely.

Given everything we have seen so far, the unacceptability of these pronouns is somewhat surprising. I have argued that plural agreement with clausal subjects indicates the existence of a plurality of proposition-like entities and that a clausal subject, like clauses in general, evokes a proposition-like entity that an abstract pronoun can be used to refer to. So a coordinated clausal subject that supports plural agreement also ought to support the use of a plural pronoun.

This dilemma can be resolved by appealing to salience. We have been

⁵Farkas and Zec (1995) argue that gender and number agreement with coordinated nominal subjects is also semantic; they suggest that the relation necessary for morphosyntactic agreement cannot be established in a coordinate structure. This proposal is compatible with the facts about clausal subjects.

assuming that a pronoun refers to the most salient entity in a situation. What we need to argue, therefore, is that coordinated clausal subjects do not make the proposition-like entities that they evoke salient enough to satisfy the conditions on definite and demonstrative pronouns.

This argument is easily made for singular pronouns. The two propositions introduced by the conjuncts in (56) are equally salient. The unacceptability of the singular pronouns therefore reflects a failure of reference resolution: there is no uniquely salient abstract object that the pronoun can refer to.

Now, a simple clausal subject makes the corresponding proposition-like entity salient enough to support the use of a pronoun, as shown in (57) below.

- (57) That the president will be impeached is likely. *This/That/It* pleases John.

If coordinated subjects behave on a par with simple clausal subjects, we'd expect coordinated clausal subjects to make the corresponding plurality of abstract objects highly salient. But perhaps things are not so simple. After all, pluralities of propositions are highly noncanonical entities, so perhaps they are more difficult to make salient. Notice that plural pronouns that are used to refer to the coordinated clausal subjects of *nominal* main predicates are much more acceptable than those used to refer to the coordinated clausal subjects of non-nominal predicates:

- (58) a. That the president will be impeached and that he will be re-elected are equally unlikely.
b. # However, they/these/those have both been predicted by bloggers.
- (59) a. That the president will be impeached and that he will be re-elected are equally unlikely outcomes.
b. (?) However, they/these/those have both been predicted by bloggers.

- (60) a. That the president will be impeached and that he will be re-elected are both possible.
b. # They/These/Those have both been predicted by bloggers.
- (61) a. That the president will be impeached and that he will be re-elected are both possibilities.
b. (?) They/These/Those have both been predicted by bloggers.

Earlier we saw that abstract argumental nominals support the use of abstract plural pronouns. Let's assume, then, that predicative and argumental nominals behave alike in making explicit, and thus more salient, the existence of pluralities of abstract objects.

Here is what we have seen so far about when abstract objects are present in the domain of discourse. Abstract objects that are introduced by abstract noun phrases behave just like concrete objects: they are freely available as the referents of pronouns and they have a lattice structure, forming pluralities just as concrete objects do. Abstract objects that are not introduced by abstract noun phrases behave somewhat differently. Although pronouns can refer to proposition-like entities that are introduced by clauses and to event-like entities that are introduced by verb phrases, not all such abstract objects have the same status in the discourse. In general, it seems that complex propositions and events created by summing pragmatically related propositions or events are consistently available as referents of pronouns. The most recently introduced proposition and event are also consistently available, while pronominal reference to other propositions and events is less reliably acceptable. Furthermore, abstract objects that are not introduced by nominal expressions do not automatically form pluralities of abstract objects, though abstract pluralities can be constructed when necessary to satisfy the requirements of a predicate.

5.2.3 Accessibility of abstract objects

Having established some basic assumptions about when abstract objects are available as the referents of pronouns, let's now consider what is special about demonstrative pronouns that refer to abstract objects.

We have already seen some cases in which *it*, *that* and *this* are all equally acceptable, as in (62):

- (62) The Ashers were predictably short of groceries the day of the party. Nicholas Asher went out to get some, got lost and arrived back only after the party started.
- a. This upset the committee so much that they made sure the Ashers never hosted a party again.
 - b. That upset the committee so much that they made sure the Ashers never hosted a party again.
 - c. It upset the committee so much that they made sure the Ashers never hosted a party again. (Asher 1993:234)

Note that the complex proposition created by summing the propositions denoted by the sentences in (62) can also be referred to by definite and demonstrative descriptions with abstract descriptive content, as shown below:

- (63) The Ashers were predictably short of groceries the day of the party. Nicholas Asher went out to get some, got lost and arrived back only after the party started.
- a. This/That/The state of affairs upset the committee so much that they made sure the Ashers never hosted a party again.
 - b. These/Those/The circumstances upset the committee so much that they made sure the Ashers never hosted a party again.
 - c. This/That/The sequence of events upset the committee so much that they made sure the Ashers never hosted a party again.

Sometimes demonstrative pronouns are more acceptable than *it* when they are used to refer to event-like or proposition-like entities. Examples (64–65) below⁶ bring out the contrast clearly:

⁶These examples are based on attested examples discussed by Gundel et al. (2003).

- (64) Gods usually come about after people develop a hierarchical social structure.
- a. But this didn't happen until 500 years after the figurines were made.
 - b. But that didn't happen until 500 years after the figurines were made.
 - c. # But it didn't happen until 500 years after the figurines were made.
- (65) Is it really the case that orphan babies left alone in their beds will have the same potential for happiness as those raised by caring parents of ample means?
- a. This is precisely what quotes such as those above will be taken to imply.
 - b. That is precisely what quotes such as those above will be taken to imply.
 - c. # It is precisely what quotes such as those above will be taken to imply.

In example (64), events of people settling down covary with the situation variable bound by *usually*. The demonstrative pronoun refers to an instantiation of the event-type of people settling down. In example (65), a proposition is embedded under a question operator, and the demonstrative pronoun picks up the embedded proposition.

The contrast in (64–65) is also reflected in definite noun phrases with descriptive content. The examples below show that reference to an instantiation of a bound variable can be accomplished with a demonstrative description but not with a definite description whose content is a bare abstract noun:

- (66) Gods usually come about after people develop a hierarchical social structure.
- a. But this development/event didn't happen until 500 years after the figurines were made.
 - b. But that development/event didn't happen until 500 years after the figurines were made.

- c. # But the development/event didn't happen until 500 years after the figurines were made.
 - d. But the development of hierarchical social structure didn't happen until 500 years after the figurines were made.
- (67) Is it really the case that orphan babies left alone in their beds will have the same potential for happiness as those raised by caring parents of ample means?
- a. This claim is precisely what quotes such as those above will be taken to imply.
 - b. That claim is precisely what quotes such as those above will be taken to imply.
 - c. # The claim is precisely what quotes such as those above will be taken to imply.
 - d. The claim that orphanages are good for babies is precisely what quotes such as those above will be taken to imply.

The parallels between abstract definite descriptions and *it*, on the one hand, and demonstrative descriptions and demonstrative pronouns, on the other, support the view that the analysis should apply in the same way to pronouns and to definite noun phrases with descriptive content. Although these examples are all quite complex and depend on subtle pragmatic inferences, the existing analysis predicts the contrast that we observe.

Note first that the event-type of hierarchical social structure developing and the proposition that orphan babies have the same potential for happiness as the children of the rich are not the unique most salient abstract objects in their respective contexts. The context of (64) also contains the equally salient event-type of gods coming about and the context of (65) also contains the negative answer to the polar question, which is arguably salient in that we infer that the writer believes it. So it is not surprising on the existing account that definite descriptions and *it* are unacceptable here.

The account also predicts that the demonstrative descriptions and pronouns are licensed in these examples in virtue of their unique reference with respect to some non-default situation, and it is fairly plausible to conclude that suitable non-default situations are indeed available. In (64), the adverbial quantification ranges over temporally ordered pairs of situations, one of which contains an instantiation of the event-type of hierarchical structure developing; the appropriate event-type can be derived from this member of the pair of situations and is highly salient in that situation. In (65), since questions evoke their possible answers, it does not seem farfetched to assume that a situation is available in which the question is answered in the affirmative, with the abstract entity corresponding to the answer of course being highly salient in that situation.

What we have seen in this section is that the account of definite and demonstrative meanings correctly predicts some fairly complex and subtle facts about the distribution of definite and demonstrative descriptions and pronouns that are used to refer to inferred abstract objects.

5.3 Reference to concrete objects

The account of personal and demonstrative pronouns also makes correct predictions about pronouns used to refer to concrete objects. In this domain we do not have to worry so much about the natural language metaphysics of the intended referents of pronouns, but we are faced with other challenges. Reference to animate entities is particularly challenging in that we must compare the demonstrative pronouns with the third person pronouns *he*, *she* and *they* as well as with *it*. I consider the puzzles raised by animacy first, and then apply

the account to pronouns used to refer to inanimate concrete objects.

5.3.1 Animacy

In the domain of animate individuals, the distribution of definite and demonstrative pronouns presents two puzzles for the account. The first puzzle is that the pronouns *he*, *she* and *they* have a use which, like the deictic use of demonstratives, is sensitive to speaker demonstrations and acceptable in contrastive contexts.

- (68) [pointing at two people]
I've met him/her but not him/her.
- (69) [pointing at two groups of people]
I've met them but not them.

Examples like (68–69) above are an apparent problem for the view that definite pronouns have essentially the semantics of the definite article, since the pronouns in (68–69) cannot be replaced by (identical) definite descriptions, as shown below.

- (70) [pointing at two people]
I've met the man but not the man.
- (71) [pointing at two groups of people]
I've met the people but not the people.

Examples (68–69) suggest that third person pronouns have demonstrative-like uses and perhaps even that third person pronouns should have a lexical semantics that is parallel to the semantics that I have proposed for demonstrative determiners.

The second puzzle is that demonstrative pronouns, unlike demonstrative determiners, cannot be used to refer to animate individuals. For example, (72–

73) below are unacceptable, or at best insulting, conveying that the speaker considers the demonstrated people to be inanimate.⁷

(72) [pointing at two people]
I've met this/that but not this/that.

(73) [pointing at two groups of people]
I've met these/those but not these/those.

These examples are an apparent problem for the claim that demonstrative pronouns and determiners are semantically equivalent, suggesting that demonstrative pronouns trigger a presupposition that the referent is inanimate.

Now, it's tempting to think that not only are the puzzles not problems but that they have related solutions, along the following lines: the pronouns *he* and *she* differ from *this* and *that* in that they have presupposition-triggering gender features. By the familiar markedness reasoning, we expect speakers who refer to animate objects to prefer forms that mark natural gender (and hence animacy) over forms that do not, all else being equal. This is conceivably the basis of the inanimacy condition on demonstrative pronouns. Of course, the choice between definite and demonstrative pronouns is not merely a choice between marking and not marking animacy: it is also a choice between marking and not marking the use of a non-default situation. Suppose that, for some reason, marking animacy is more important than marking the use of a non-default situation. Then we would have an Optimality-Theory-like explanation for the sensitivity of definite pronouns to speaker demonstrations: the definite

⁷Demonstrative pronouns in precopular position in specificational copular sentences, as in (i), are an apparent exception to this descriptive generalization.

(i) That's John Smith.

Mikkelsen (2004) argues that this is only an apparent exception, and that DPs in this position denote properties instead of entities.

pronoun is preferred in order to mark animacy even when the pronoun is interpreted relative to a non-default situation such as the situation established by a demonstration.

However, this last step, linking demonstrative-like uses of definite pronouns to a sort of competition between semantic features, does not extend to plural pronouns. In fact, plural pronouns introduce two further complications: the plural definite pronoun *they* can refer to pluralities of inanimate objects, as in (74) below, and the plural demonstrative pronoun *those* with a postnominal modifier can refer to pluralities of animate objects, as in (75).

(74) [pointing at a large and precarious pile of rocks]
They're going to fall down any minute now.

(75) Those interested in linguistics should read *The Language Instinct*.

In the domain of singulars, definite pronouns consistently refer to animate entities and demonstrative pronouns consistently refer to inanimate entities, but clearly something more complex must be said about plural pronouns. Suppose we maintained the original hypothesis that demonstrative determiners and pronouns are semantically equivalent. In order to maintain the strong hypothesis that the plural demonstrative pronouns are unmarked for animacy, and to explain why unmodified demonstrative pronouns consistently refer to inanimate objects, it would be necessary to assume that *they* is ambiguous between a reading that presupposes animacy and a reading that is unmarked. The same markedness reasoning then applies to both singular and plural pronouns: when the referent is animate, all else being equal, a definite pronoun is preferred over a demonstrative pronoun. This predicts that we will find languages that use different forms for animate and inanimate third person plural pronouns,

something that does not appear to be the case. Furthermore, on this approach something must still be said about why demonstrative pronouns that refer to animate entities are acceptable just with postnominal modification.

Suppose, on the other hand, that we adopt a slightly weaker hypothesis regarding the equivalence of demonstrative determiners and pronouns and take demonstrative pronouns to differ from determiners in triggering an inanimacy presupposition. In that case we do not need to say anything special about (in)animacy conditions on *they*; we can simply assume that *they* is unmarked for animacy and can refer freely to both animate and inanimate objects.⁸

On this approach something special must still be said about the construction involving a demonstrative and a postnominal modifier, but this time we must explain why the construction allows reference to an animate entity at all. The obvious answer is to take this to be a special construction containing a demonstrative determiner (without an inanimacy condition) and a null noun, that is, with a structure similar to the one in an NP anaphora context, illustrated below:

- (76) The students who were interested in engineering took Physics 101 and those who were interested in medicine took Biology 101.

On this approach, we must assume that a demonstrative determiner licenses a null head just when there is a postnominal modifier. Otherwise, the inanimacy condition on demonstrative pronouns will have no force, because a pronoun could always be reanalyzed as a determiner with a null N complement. What gives rise to this licensing condition remains an open question, but

⁸Donka Farkas (p.c.) observes that there is a crosslinguistic tendency for gender and animacy distinctions to be collapsed in the plural and speculates that this may arise from the possibility of reference to mixed groups.

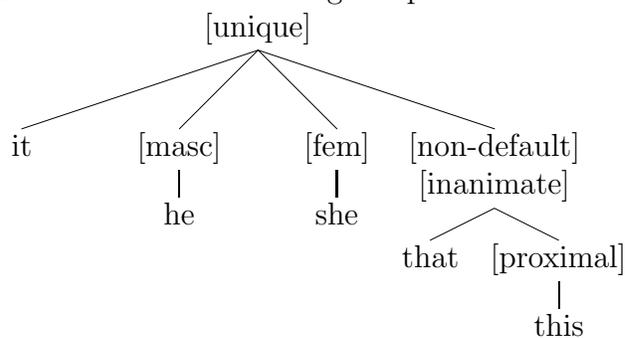
note that determiners are known to place various and sometimes idiosyncratic syntactic constraints on NP anaphora.⁹ It is particularly suggestive to note that demonstrative determiners combine with the partitive construction only when there is a postnominal modifier, as shown below; note that the partitive construction has been argued to contain a null N:¹⁰

(77) those of the guests who arrived late

(78) * those of the guests

All in all, taking demonstrative pronouns to trigger an inanimacy presupposition is a relatively small step away from the original hypothesis and requires fewer questionable assumptions than taking demonstrative pronouns to be unmarked for animacy. A schematic diagram illustrating the full set of semantic features that I am assuming for pronouns is shown in (79–80) below, and revised meanings for demonstrative pronouns are given in (81–82).

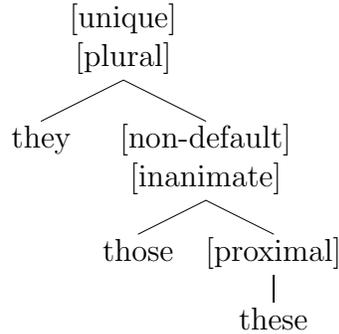
(79) Semantic features on singular pronouns



⁹See Stockwell et al. (1973), Jackendoff (1977), and Nerbonne et al. (1989) on the syntax of NP ellipsis.

¹⁰I thank Bill Ladusaw (p.c.) for bringing this fact to my attention. See also Barker (1998) for recent discussion of the syntax and semantics of partitives.

(80) Semantic features on plural pronouns



- (81) $\llbracket that_n \rrbracket$ (pronoun): defined iff $most\text{-salient}(s_n)$ is a singleton set, s_n is a non-default situation, and $\iota x.\text{most-salient}(x)(s_n)$ is inanimate. If defined, denotes $\iota x.\text{most-salient}(x)(s_n)$.
- (82) $\llbracket this_n \rrbracket$ (pronoun): defined iff $most\text{-salient}(s_n)$ is a singleton set, s_n is a non-default situation, and $\iota x.\text{most-salient}(x)(s_n)$ is inanimate and proximal to the speaker. If defined, denotes $\iota x.\text{most-salient}(x)(s_n)$.

This is the picture of (in)animacy restrictions that we are left with: the definite pronouns *he* and *she* trigger animacy presuppositions, the demonstrative pronouns trigger inanimacy presuppositions, and the pronouns *it* and *they* are unmarked for animacy. The construction apparently containing pronominal *those* with a postnominal modifier, which is used to refer to groups of animate entities, is actually a demonstrative determiner with a null N complement.

Now let's return to the first puzzle, concerning demonstrative-like uses of personal pronouns. Notice that even when *they* refers to groups of inanimate objects, it has a demonstrative-like use:

- (83) [pointing to two large piles of rocks]
- a. THEY'RE going to fall down any minute now, but THEY look pretty stable.
 - b. I can identify THEM, but not THEM.

Since *they* clearly does not trigger an animacy presupposition in (83), the availability of demonstrative-like uses of definite pronouns cannot be due to

an animacy or gender feature overriding the [non-default] feature. This puzzle still needs an explanation.

On the view that the property arguments of pronouns are saturated with uninformative properties, the compatibility of definite pronouns with speaker demonstrations is surprising. But on the view that I have adopted, in which the property argument of pronouns is saturated with the property of contextual salience, another explanation is possible. I have argued that speaker demonstrations establish non-default situations. But of course a more traditional view of demonstrations is that they affect the salience of entities in the context. There is no particular conflict between these ideas, so let's assume that gestures of demonstration can be used for either purpose, to establish a situation or to make an entity salient. Then the compatibility of personal pronouns with speaker demonstrations is no longer surprising. A demonstration makes the demonstrated entity highly salient, and the personal pronoun refers to the most salient entity in the context that satisfies the other presuppositions of the sentence. The demonstrative-like use of a personal pronoun can be given the same semantics as other definite pronouns, and we do not necessarily expect definite pronouns to have other similarities to demonstratives. Definite descriptions are still correctly predicted not to be sensitive to speaker demonstrations as long as we assume that definite descriptions are not sensitive to salience. The analysis developed here is thus incompatible with the salience-based treatment of definiteness proposed by Lewis (1979) and von Stechow (1997a,b).

Now that we have considered the puzzles arising from reference to animate entities, let's focus on pronouns that are used to refer to concrete inanimate

objects.

5.3.2 Composite entities

Demonstrative pronouns tend to be preferred to the third person pronoun *it* in referring to composite entities. In example (84) below, the preferred referent of *that* is the number 12, i.e. the sum that results from the addition operation described in the preceding sentence. The preferred referent of *it* in the same context is the number 7, i.e. the theme of the previous sentence.¹¹ In example (85), the preferred referent of *that* is the composite entity consisting of the previously mentioned cup and saucer, while the preferred referent of *it* is the cup.

- (84) Add seven to five.
a. Now subtract that from twenty.
b. Now subtract it from twenty.
- (85) Put the cup on the saucer.
a. Now put that next to the candle.
b. Now put it next to the candle. (Brown-Schmidt et al. 2005)

Note that we are dealing here with noncanonical complex entities, not with pluralities. If the referents of the demonstrative pronouns above were ordinary pluralities, the pronouns would be morphologically plural.

¹¹This example is inspired by Isard's (1975:289–90) observation that *it* in (i) below is most likely to be understood as referring to the previously mentioned number 19, while *that* in (ii) is most likely to be understood as referring to the square of 19. Isard also notes that (iii) is ambiguous, suggesting that *it* refers to entities that have been explicitly mentioned.

- (i) First square 19 and then cube it.
(ii) First square 19 and then cube that.
(iii) First take the square of 19 and then cube it.

It's difficult to be certain about the relative salience of this type of complex entity. Linguistic theories of prominence typically do not address composite entities, nor are there psychological studies of the status of composite as opposed to simple entities. However, we have no a priori reason to suppose that in contexts like (84–85), the composite entities, which are not explicitly mentioned, are more salient than their explicitly mentioned atomic parts. So it is not really surprising that *it* is dispreferred when referring to composite entities in these contexts. The other half of the story is to understand why demonstrative pronouns are licensed. Here is one possibility. The contexts in (84–85) each describe events with a result state in which the composite entity is created: in (84) the event of addition results in the creation of a sum, while in (85) the event of putting one object on top of another results in the creation of a spatiotemporally and functionally related group. While the salience of the composite entities in the discourse context as a whole is debatable, it seems likely that the composite entities are the most salient members of the respective result states. Note also that the result states are non-default situations. So we correctly predict demonstrative pronouns to be licensed here in virtue of being interpreted relative to the result state.

If we're on the right track in linking the acceptability of demonstrative pronouns in (84–85) to the presence of a result state in which the relevant composite entity is created, then we expect demonstrative pronouns used to refer to composite entities to be less acceptable in contexts lacking appropriate result states. Examples (86–87) below show that this prediction is borne out. Note that the first sentence in (87) describes a state in which we might expect the

composite of the cup and saucer to be relevant, but in fact the demonstrative pronoun is marginal at best. The explicit creation of a composite entity seems to be the crucial factor in licensing a demonstrative pronoun.

- (86) a. A cup_{*i*} and a saucer_{*j*} were sitting on the counter.
b. Mary put #it_{*i+j*}/??that_{*i+j*} in the sink.
- (87) a. A cup_{*i*} was sitting on a saucer_{*j*}.
b. Mary put #it_{*i+j*}/??that_{*i+j*} to the right of the placemat.

5.3.3 Simple inanimate entities

The most extensive work to date on the distribution of *it* and demonstrative pronouns that refer to concrete inanimate objects is within the framework of the cognitive status theory of definiteness (Gundel et al. 1993, 2003). Researchers pursuing this approach argue that the choice among various definite noun phrases is governed by the cognitive status of the intended referent. According to Gundel et al. (1993), *it* is used to refer to an entity that is the current center of attention of the discourse participants, or “in focus,” while demonstrative pronouns are used to refer to entities that are in the discourse participants’ working memory, or “activated”—i.e. familiar and recently evoked. For example, if John brings a large and brightly colored package into the room, and everyone gathers around John, looking at the package, (88) below is an appropriate question to ask, but if John brings a small package discreetly into the room and only the speaker notices it, (89) is an appropriate question to ask:

- (88) What is it?
(89) What’s that?¹²

¹²I am grateful to Barbara Partee (p.c.) for bringing these examples to my attention.

In this section I will show how the insights about pronoun distribution from the cognitive status theory can be incorporated into the present analysis. The larger theoretical question at stake is whether it is necessary and appropriate to incorporate concepts like cognitive status into the lexical semantics of definite determiners and pronouns. On the account that I am pursuing, cognitive status is extralinguistic. My aim is to show that at least some descriptive generalizations about cognitive status can nevertheless be captured. While this dissertation is not intended as a rebuttal to the cognitive status approach to definite noun phrases, I hope to establish that some of the empirical advances made under that approach do not constitute arguments in favor of a particular theory.

The cognitive status “in focus” is reminiscent of the information structural notion of focus, and we might wonder to what extent the cognitive status approach can be reduced to a story about information structure. Certainly the distinction between *it* and *that* has some similarities to the distinction between unstressed and stressed *he/she*. For example, in contrastive contexts where a demonstrative pronoun is preferred over *it*, gendered definite pronouns must be accented:

- (90) [pointing at two rocks]
a. THAT might fall but THAT is stable.
b. # IT might fall but IT is stable.
- (91) [pointing at two people]
a. SHE might leave but SHE will stay for a while.
b. # She might LEAVE but she will STAY for a while.

Consider also a context where a mysterious and strangely dressed woman has entered a room and everyone has gathered around to look at her. In this

context it is possible (if impolite) to utter the question in (92) below; notice the parallel between (92) and (88). By contrast, in a context where a woman enters a room discreetly and only the speaker notices, (92) is unacceptable, and (93) is possible; notice the parallel between (93) and (89).

(92) Who IS she?

(93) Who's SHE?

So we might be tempted to conclude that *it* is the inanimate counterpart of the unstressed gendered pronouns, while *that* is the inanimate counterpart of the stressed gendered pronouns, and to attribute differences in the distribution of *it* and *that* to general constraints on accent placement.

However, it is important to recognize that *it* can bear contrastive stress under some circumstances, while *that* can be (relatively) unstressed. Examples (94–96) below show that *it* can bear contrastive stress and appear in the prosodically strong position following a verb particle.

(94) The dog chased the cat and then IT chased the dog.

(95) The stone chipped the plate and IT scratched the stone.

(96) At first we were afraid that the avian flu would wipe out the chicken population, but fortunately the vaccine wiped out IT.

Example (97) below shows that the pronoun *that* can be given (in the sense of Schwarzschild (1999)), and (98) shows that *that* can precede a verb particle; in both cases the pronoun is relatively unstressed.

(97) JOHN's read THAT, and MARY's read that, and FRED's read that, so I guess we can discuss that in our reading group.¹³

(98) [The dog is chewing on someone's homework]
Put that DOWN!

¹³This example is due to Bill Ladusaw (p.c.).

An analysis based entirely on constraints on accent placement or information structure will not be sufficient to account for the distribution of *it* and *that*.

Returning to the cognitive status approach, let's consider how to incorporate the descriptive generalizations about cognitive status into the present approach. Because I have argued that *it* refers to the most salient entity in a default situation, I must assume that a referent that is "in focus" is the unique most salient entity in the relevant default situation, such as the context of utterance. This certainly seems like a natural connection to make: surely we'd want to assume that an entity which is the current focus of attention of all discourse participants is also the most salient entity in the context.

Likewise, I must assume that the cognitive status "activated, but not in focus" correlates with being the most salient entity in a non-default situation, as these are the conditions placed on demonstrative pronouns by the two accounts. This also seems like not much of a stretch. An activated referent will by definition be salient to some degree. Furthermore, Gundel et al. (1993) take definite noun phrases to be "uniquely identifiable," a position which is consistent with the implementation of the uniqueness condition that I have adopted.

Let's briefly compare how the two approaches account for the simple examples in (99–100) below, which are parallel to (88–89) except that the sentences containing the pronouns are not copular clauses:

- (99) a. [Mary brings a large package into the room. Everyone stares at the package as it starts to tick and rock back and forth.]
b. John: It's going to explode!
- (100) a. [Mary brings a large package into the room. Only John notices as the package starts to tick and rock back and forth.]
b. John: That's going to explode!

According to the cognitive status approach, *it* is licensed in (99) because the intended referent is the current focus of attention of all the discourse participants. A demonstrative pronoun is also licensed in (99) because the intended referent is “activated,” but in general, forms that place the most stringent conditions on the cognitive status of their referents are preferred. The status “in focus” is stronger than “activated,” so *it* is preferred in (99). In example (100), the intended referent of the pronoun is not in focus, so *it* is not licensed. The intended referent is “activated,” however (presumably in virtue of John having pointed at it), so a demonstrative pronoun is licensed.

According to the approach presented in this dissertation, *it* is licensed in (99) because the referent is the most salient concrete inanimate entity in the discourse context. Because the less marked definite pronoun *it* can be used to refer successfully, the more marked demonstrative pronoun is dispreferred. In example (100), the intended referent of the pronoun is not the most salient concrete inanimate entity in the discourse, since some discourse participants have not noticed it yet, so *it* is not licensed. However, the intended referent is the most salient concrete inanimate entity in the situation corresponding to John’s demonstration, so *that* is licensed. This shows that either approach can successfully account for the observation that *it* tends to refer to the most salient entity in the discourse context, while demonstrative pronouns tend to refer to less salient entities.

One interesting difference between the two approaches is that they rely on inverse markedness relations among pronouns. According to Gundel et al. (1993), *it* is the most marked definite noun phrase because it places the most

stringent condition on the cognitive status of its referent, and demonstratives are less marked. On the account presented in this dissertation, demonstratives are more marked than both *the* and *it*. Both accounts use the respective markedness relations to account for similar facts. One undesirable consequence of the cognitive status approach, however, is that demonstrative determiners and pronouns must be analyzed as occupying several different positions in the givenness scale: demonstrative pronouns and demonstrative descriptions with *this* are “activated,” demonstrative descriptions with *that* are “familiar,” and the so-called indefinite use of *this NP* is merely “referential,” or used by a speaker with the intention of referring to a particular entity. Reversing the markedness scale, as I have done in this dissertation, allows for a unified account of demonstrative determiners and pronouns.

We have seen in this section that the proposed account of personal and demonstrative pronouns makes correct predictions about pronouns used to refer to concrete inanimate objects. These facts have previously required an appeal to the cognitive status of the intended referents. While the present approach continues to appeal to the notion of “salience,” the role of cognitive status in the semantics of pronouns is much reduced. Furthermore, the present account differs from the cognitive status account in allowing a unified treatment of demonstrative pronouns and determiners.

5.4 Conclusion

This chapter has shown that the theory of definite and demonstrative determiners that I have developed can be applied successfully to demonstrative and

third person definite pronouns. The chapter began with the strong hypothesis that demonstrative pronouns are semantically equivalent to demonstrative determiners and that third person definite pronouns are semantically equivalent to the definite article. In the course of the chapter, I proposed three adjustments to the strong hypothesis. First, I argued that pronouns differ from determiners in that they are sensitive to salience in ways that descriptions are not, and I implemented this observation by taking the property argument of definite and demonstrative pronouns to be saturated with a property having to do with contextual salience. Second, I noted that English singular third person pronouns trigger language-specific gender and animacy presuppositions that are not shared by the definite article. Finally, I argued that English demonstrative pronouns trigger inanimacy presuppositions, again presumably language-specific, that are not shared by demonstrative determiners. The inanimacy presuppositions are revealed in the plural, where gender and animacy distinctions in third person pronouns are collapsed.

Given these modifications, the core analysis of definite and demonstrative pronouns makes correct predictions about the distribution of a number of uses of personal and demonstrative pronouns, including uses referring to abstract objects, to concrete composite objects, and to simple animate and inanimate concrete objects. The default/non-default distinction that I have used throughout the dissertation also successfully accounts for facts that have been analyzed in previous research as relating to the cognitive status of the intended referent.

Chapter 6

Conclusion

Traditional accounts of demonstrative noun phrases take demonstratives to be fundamentally different from definite descriptions and third person pronouns. In this dissertation, I have established several nontrivial similarities among definite descriptions, demonstrative descriptions, third person pronouns and demonstrative pronouns. In chapter 2 I showed that definite and demonstrative descriptions have the same scopal possibilities and argued that this reflects the fact that they are indirectly referential and subject to a uniqueness condition. The analysis of definite and demonstrative determiners in chapter 3 provides additional support for these assumptions. In chapter 5, I showed that the analysis of definite and demonstrative determiners extends successfully to third person and demonstrative pronouns, supporting the view that these pronouns are likewise indirectly referential and subject to a uniqueness condition.

The view of definiteness that I defend here, in which the semantic common denominator of definite noun phrases is a uniqueness condition satisfied relative to a contextually restricted domain, is one that many researchers have proposed

in analyses of definite descriptions (see Roberts (2003) and Recanati (2004) for recent approaches of this type). It has been much less common to consider how demonstrative noun phrases fit into this view of definiteness (see, however, King (2001) and Roberts (2002)), and one of the major results of this dissertation has been to show that we can make some progress towards understanding the nature of definiteness by comparing subtypes of definite noun phrases. This raises the question of whether further advances in the study of definiteness can be made by adding new comparisons to the picture. Even though the class of definite noun phrases is relatively well-studied, there is still room for more work comparing free relatives and correlative constructions with each other and with definite descriptions, and for continuing to compare descriptive noun phrases with pronouns and third person pronouns with demonstrative pronouns. In light of the uniformly indirectly referential analysis of definite noun phrases that I have defended here, it may also be worthwhile to reconsider the place of proper names in the typology of definite noun phrases.

A second major result of the dissertation is that there are markedness relations among definite determiners and pronouns in English that influence the distribution of definite noun phrases. I have argued that the definite article is the least marked definite determiner, requiring only uniqueness relative to a situation; that the so-called distal demonstratives require uniqueness relative to a non-default situation; and that the proximal demonstratives require uniqueness relative to a non-default situation as well as proximity to the speaker. In the domain of pronouns, I have argued that a parallel markedness relation holds, albeit complicated by the presence of additional gender and (in)animacy pre-

suppositions. I have proposed that third person pronouns are the counterpart of the definite article, merely requiring uniqueness relative to a situation, while the demonstrative pronouns require uniqueness relative to a non-default situation and the proximal demonstrative pronouns additionally require proximity to the speaker. In general, I have argued that speakers exploit the proposed markedness hierarchies by using marked forms to mark the use of non-default situations and proximity whenever these factors are necessary for successful reference, and otherwise preferring less marked forms. The central role played by the markedness relations in the distribution of definite noun phrases shows that the semantics of a particular determiner or pronoun cannot be studied in isolation. It is not only productive but essential to compare demonstrative determiners with the definite article and demonstrative pronouns with third person pronouns.

The markedness relations that I have proposed for the English definite system leave us with certain expectations about crosslinguistic variation among definite systems. The proposed meaning of the English definite article is extremely weak, and many facts about the distribution of the definite article depend on its interaction with the demonstrative determiners. It would be surprising, therefore, to encounter a language with a definite article identical to the one in English but without demonstrative determiners. On the other hand, it would not be surprising at all to encounter a language lacking a definite article that is as bleached as the English definite article. Nor would it be surprising to find a language with a richer inventory of demonstrative determiners, since the analysis proposed for English can easily be extended

by adding presuppositional features. These expectations are all borne out: while many languages lack a definite article, no language (as far as we know) lacks demonstrative noun phrases, and many languages have rich inventories of demonstratives (Diessel 1999). An obvious question to ask as the analysis of this dissertation is extended to other languages is, of course, to what extent the distribution of definite and demonstrative noun phrases in other languages can be explained by markedness relations among determiners and pronouns.

The final two major results of the dissertation are relevant to the broader issue of the modal anchoring of nominal constituents. First, I have argued that demonstrative determiners and pronouns require interpretation relative to non-default situations, or situations distinct from the situations relative to which main predicates are evaluated and truth conditions are calculated. This approach leads to the view that demonstrative noun phrases are much more similar to definite descriptions and third person pronouns than has been previously believed, because on this account demonstrative noun phrases do not have access to special means of reference such as demonstrations or speaker intentions to refer; instead, the interpretation of demonstratives depends on the same tools that are available to other noun phrases. Much of the philosophical work on demonstrative noun phrases, in view of my proposals here, turns out to apply to deictic *uses* of noun phrases rather than to the semantics of demonstrative determiners and pronouns.

The view of demonstrative determiners as constraining the modal anchoring of their nominal complements opens up several new questions about the relationship between determiner meanings and the modal anchoring of nominal

constituents. One question that immediately arises is to what extent demonstrative determiners and pronouns in other languages can be analyzed as imposing constraints on situation variables. Traditional grammars tend to describe demonstrative noun phrases as locating their referents in physical space, since demonstrative systems tend to express contrasts between proximal and distal referents, referents that are closer to the speaker or the hearer, and so on. There is a clear connection between situations and locations: situations have spatiotemporal locations. A point of departure for studying the crosslinguistic semantics of demonstratives, then, might be to make the strong hypothesis that the apparently locative nature of demonstratives always reflects constraints that demonstratives place on situation variables. Looking beyond demonstratives, we might also ask what other determiners constrain the modal anchoring of their nominal complements, and how situation variables are constrained. Given that determiners have also been claimed to constrain the temporal anchoring of their nominal complements (Musan 1995), another open question concerns the relation between modal and temporal anchoring in the interpretation of nominals.

Stepping back to the larger picture, the claim that demonstrative determiners constrain the modal anchoring of their nominal complements, paired with the situation-based analysis of contextual domain restriction that I have adopted, shows that the lexical semantics of determiners cannot be separated in any straightforward way from the pragmatics of nominal interpretation. The situation parameter of a nominal predicate depends both on the pragmatic factors governing domain restriction and on the constraints imposed by the

determiner.

The final major result of the dissertation concerns the modal anchoring of nominal modifiers. I have argued in chapter 4 that postnominal modifiers are modally independent and support the introduction of new situation variables, and that this allows postnominal modifiers to license attributive and opaque readings of demonstrative descriptions. This result is attractive because it neatly ties together two independent analyses: my analysis of demonstrative determiners, which applies without revision to postmodified demonstratives, and Dayal's (1998, 2004) approach to licensing by modification, which links the ability of postnominal modifiers to license various constructions to their modal independence. One new question raised by the analysis of postmodified demonstratives is whether similar effects are found in other languages; the frozen correlative constructions found in European languages like German and Russian appear to be likely candidates. If attributive and opaque demonstratives are found to be structurally licensed in other languages, then the licensing conditions on those constructions have the potential to probe the modal anchoring and composition of nominal constituents.

Even in the analysis of exotic constructions like postmodified demonstratives, the view that emerges from this dissertation is that demonstrative noun phrases are not as exotic as we thought, and can be analyzed with the same tools that are needed to account for definite descriptions and third person pronouns. The analysis that I have presented is firmly in line with the growing body of literature taking the role of determiners to be to impose constraints on variables. What I have added to that literature is to show that determiners

may also impose constraints on the situation variables associated with their nominal complements. Demonstrative noun phrases, at first glance apparently stubbornly extensional, have shown us something new about the intimate connections among determiner meanings, domain restriction, and modal parameters.

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