

“Descriptive readings” of Noun Phrases¹

1. “Descriptive readings” of indexicals

Following Kaplanian tradition, I’ll call both pure indexicals like ‘I’ and demonstratives like ‘she’ and ‘that’ *indexicals*. Though these expressions all have uses in which they are used to talk about particular people and objects, as Nunberg [1993] pointed out, they also have uses in which they allow the sentences they occur in to convey claims that in some sense don’t *seem* to be about particular people and objects:

1. (uttered by Tracey to Glenn, who she just let in the door, explaining why she didn’t answer the door sooner) ‘You could have been a murderer!’²
2. (uttered pointing at the Pope) ‘He is usually Italian.’³
3. (uttered by a condemned prisoner) ‘I am traditionally allowed to order whatever I like for my last meal.’⁴

Let’s take a moment to discuss the relevant claims conveyed by 1-3. 1 has a use on which it conveys something like the claim that for all Tracey knew the person at the door was a murderer (instead of Glenn). Hence, the claim we are concerned with could be true even if Tracey *knows* that Glenn is not a murderer. 2 has a use on which it conveys something like the claim that more often than not we have an Italian Pope. 3 has a use on which it conveys a claim that seems true, even supposing that the tradition in question does not mention the utterer of 3.

I’ll call the relevant claims these sentences can be used to convey *descriptive readings* of the sentences (in context). I talk of uses of these sentences *conveying* the relevant claims here so as not to prejudge the question of whether the sentences *semantically express* the claims in question. I return to this below.

¹ I use the traditional term ‘noun phrase’ instead of ‘determiner phrase’ here, but nothing hangs on the difference for our purposes.

² Recanati [1993] (p. 301) credits an example of this sort to Nunberg [1990]. Nunberg’s [1993] example that is like 1 uses a name instead of an indexical. See his note 34. Sæbø [2015] mentions examples like 1 containing indexicals and notes that they occur in Heim [MS].

³ From Recanati [2005] (p. 297) credited to Nunberg.

⁴ From Nunberg [1993].

There is a device in each sentence that plays a role in generating the relevant reading. In 1, it is the modal verb phrase and so I will call such examples *modal examples*. In 2, it is the quantificational adverb and so I will call such examples *Q adverb examples*. In 3, it is the adverb ‘traditionally’; and relevantly similar examples can be constructed with ‘according to the rules of chess’, ‘according to California State Law’ and so on. I’ll call such expressions *regulatives* and I’ll call examples containing them with descriptive readings *regulative examples*.⁵ The central question this paper addresses is how descriptive readings of sentences like 1-3 arise. Most previous accounts of descriptive readings of sentences like 1-3 have assumed that a uniform account of how descriptive readings arise applies to all of 1-3.⁶ I will show that there are important differences in behavior between the different sorts of examples that motivate giving separate accounts of each of 1, 2, and 3. I’ll begin by sketching my positive account of each of 1-3. I’ll then criticize a recent account of descriptive readings in Sæbø [2015].

2. Regulative examples

A first point to note about 3 is that there is evidence that ‘I’ in 3 refers to the speaker as usual. The following is felicitous and the second conjunct appears to predicate *having decided on tacos* of the speaker:

3+. I am traditionally allowed to order whatever I like for my last meal and have decided on tacos.

The most straightforward explanation of this is that ‘I’ in the first conjunct refers to the speaker.

A second important point is that sentences containing regulatives and *names or quantifiers* instead of indexicals have descriptive readings in the sense that they generate the same puzzle that 3 does.⁷

⁵ Note that the way I am using these terms, to call a sentence a *modal*, *Q adverb* or *regulative example* without qualification is to claim that it has a descriptive reading.

⁶ See Nunberg [1993, 2004], Elbourne [2008], Sæbø [2015], etc. Hunter [2010] is an exception, offering (somewhat) different accounts of (what I call) modal and Q adverb examples (see pp. 135-36). So far as I can see, she doesn’t consider regulative examples. (Sæbø [2015], following Hunter [2010], notes differences between Q adverb and modal examples (p. 1119, 1148) but in the end favors a unified account of descriptive readings (p. 1120, pp. 1148-1150) and offers only a single account of them (pp. 1139-1151 and Appendix), which I discuss below.

⁷ Both Nunberg [1993] and Elbourne [2008] claim that the descriptive readings of sentences 1-3 are generated by features of the semantics of indexicals. Hence, they do not predict descriptive readings of sentences that are like 1-3 except for containing names or quantifiers instead of indexicals. However, both regulative examples and modal examples containing names and quantifiers allow descriptive readings.

Imagine prison officials telling a condemned prisoner, Mr. Rowland, what his last meal is going to be, when the warden interrupts and says:

4. Wait! Mr. Rowland is traditionally allowed to order whatever he likes for his last meal.⁸

This seems true and raises the same puzzle 3 does: why does 4 seem true, when the tradition in question says nothing about Mr. Rowland? For an example with a quantifier, imagine a condemned prisoner addressing a room containing only other condemned prisoners—so that all the people in the room are condemned prisoners—explaining to them what they can expect leading up to their executions. He says:

5. Now remember: every man in this room is traditionally allowed to order whatever he likes for his last meal.

There are presumably two readings resulting from giving the quantifier wide and narrow scope relative to ‘traditionally’:

5a. Traditionally [every man in this room: x[x is allowed to order whatever he likes for his last meal]]

5b. Every man in this room: x[traditionally [x is allowed to order whatever he likes for his last meal.]]

Prima facie one might think that 5a is bound to be false assuming that the relevant tradition makes no pronouncements about everyone in the room in question. But 5b appears to assert of each man in the room, that tradition says something about him; and it doesn’t. So we have the same puzzle here we have in the case of 3 and 4: why does 5 have a true reading?

The fact that we can get descriptive readings with regulatives where the sentences in question contain names and quantifiers instead of indexicals reinforces the first point made above about regulatives: that ‘I’ in 3 appears to refer to the speaker and so is functioning semantically in the way it is

⁸ Sæbø [2015] cites a regulative example from Maier [2009] containing a name instead of an indexical, but he seems to regard it as marginal and as requiring some special setting up (example 52 p. 1149). My own view is that 4 and similar examples are impeccable as long as certain claims are common ground: in the case of 4 that Mr. Rowland is a condemned prisoner. Here is an attested case of a regulative example with a name, where it is common ground that Trump is the U.S. President: “...previous Supreme Court precedent strongly suggests Trump cannot fire Mueller unilaterally.” (<https://www.politifact.com/truth-o-meter/article/2018/apr/12/can-donald-trump-fire-special-counsel-robert-muell/>). On the account I give below of regulative examples, here Supreme Court precedents provide the ordering source for the modal ‘cannot’.

usually thought to function. For surely the name in 4 and the quantifier in 5 are functioning semantically in the usual way. But then that gives us reason to think ‘I’ in 3 is as well.

To solve the puzzle presented by 3, 4 and 5, then, what we want is a single, uniform explanation of why each seems true given that the tradition in question says nothing about particular people. Further, the explanation should allow that ‘I’ in 3 refers to the speaker; and that name and quantifier are functioning as usual in 4 and 5.

A first point to note is that 3-5 are equivalent to the result of fronting ‘Traditionally’:

3f. Traditionally, I am allowed to order whatever I like for my last meal.

4f. Traditionally, Mr. Rowland is allowed to order whatever he likes for his last meal.

5f. Traditionally, every man in this room is allowed to order whatever he likes for his last meal.

Second, note that 3-5 are all understood in such a way that the tradition in question is what allows the relevant individuals to order whatever they want for their last meals. This is not true of an example like the following:

6. Traditionally Johnny is allowed by his mother to stay up late one night a week.⁹

Here it is the mother doing the allowing and ‘Traditionally’ seems to be functioning essentially as an adverb of quantification whose meaning is similar to ‘usually’. I claim that is not what is going on in 3-5.

Finally, note that the result of replacing ‘Traditionally’ with ‘In view of prison traditions’ in 3-5 are equivalent to 3-5

3k. In view of prison traditions, I am allowed to order whatever I like for my last meal.

4k. In view of prison traditions, Mr. Rowland is allowed to order whatever he likes for his last meal.

5k. In view of prison traditions, every man in this room is allowed to order whatever he likes for his last meal.

This is suggestive, because ‘allow’ is a modal, and Kratzer [2010, 2012] takes ‘In view of...’ phrases to provide *conversational backgrounds* for modals. This suggests a Kratzer-style treatment of 3-5 on which

⁹ Sam Carter suggested examples of this general sort to me to make a somewhat different point.

‘traditionally’ is providing a conversational background for the modal ‘allow’.¹⁰ It turns out that on such a treatment, 3-5 are arguably all true relative to the context c and the world of the context w_c . Hence, if a Kratzer-style approach to 3-5 is correct, 3-5 just *are* true even though the relevant tradition says nothing about particular people and the indexical, name and quantifier are functioning semantically as usual. This looks to be a satisfying resolution of the apparent puzzle presented by 3-5.

On Kratzer’s account of modals, the denotation of a modal involves quantification over possible worlds. Kratzer invokes what she calls *conversational backgrounds* to determine the set of worlds a modal quantifies over. Conversational backgrounds are functions from worlds to sets of propositions (type $\langle s, stt \rangle$). Modals are interpreted relative to two conversational backgrounds. The first is the *modal base*. Like any conversational background, it maps a world to a set of propositions. This gives us the set of worlds accessible from the base world (the world of evaluation): those in which all propositions in the set it maps the base world to are true. There are two kinds of modal bases. *Epistemic modal bases* map a base world to the set of propositions comprising some information state or body of evidence in the base world (e.g. the set of propositions known by the speaker in the base world). *Epistemic modals* are simply modals evaluated relative to epistemic modal bases. *Circumstantial modal bases* map a base world to the set of propositions comprising some circumstance in the base world (e.g. the set of propositions containing the propositions that Mary needed to get to Paris and that taking the train was her only option, which are both true in the base world). As before, this determines a set of worlds: the set of worlds in which all propositions in the set of propositions the modal base maps the base world to are true. We will

¹⁰ As I indicated in discussing 6 above, ‘traditionally’ also has a use on which it seems to be a quantificational adverb whose meaning is somewhere between that of ‘usually’ and ‘always’ as in the following headline from ESPN online: ‘Tom Brady traditionally sizzles against the Jaguars.’ (something a bit more has to be going on since things like ‘People traditionally have two legs’ is quite bad). Note that although 3 is equivalent to ‘Tradition dictates that I am allowed to eat whatever I want for my last meal’, it does not seem that the former sentence is equivalent to ‘Tradition dictates that Tom Brady sizzles against the Jaguars.’ Indeed, this latter sentence seems infelicitous. As I mentioned above, in 3-5, it is the (prison) tradition that makes the speaker eating whatever he wants for his last meal allowable. I noted that this contrasts with an example like ‘Traditionally, Johnny is allowed by his mother to stay up late one night per week.’ Here, it is the mother’s rules that allow Johnny to stay up late. So a diagnostic for the sentences our semantics applies to is that they must contain a modal and ‘traditionally’ and a tradition must be providing a conversational background for the modal (discussed below), which is not true of the example of Johnny and his mother. Thanks to Sam Carter for helpful discussion.

be concerned only with circumstantial modal bases here. *Root modals* are simply modals evaluated relative to circumstantial modal bases. The second conversational background is the *ordering source*. As its name suggests, it imposes an ordering on the worlds a modal quantifies over. An ordering source might map a world to the body of laws in that world, and then order worlds depending on how many of the laws hold in them. Where g is an ordering source, w' is *at least as ideal as* w relative to $g(w)$ iff $\{p \mid w' \varepsilon p \ \& \ p \varepsilon g(w)\} \subseteq \{q \mid w \varepsilon q \ \& \ q \varepsilon g(w)\}$. Different flavors of root modals (ability, deontic, etc.) result from different ordering sources. I'll assume here that there is a most ideal set of worlds relative to an ordering source $g(w)$ and modal base $f(w)$ and will use $best_{g(w)}(\cap f(w))$ to denote it.¹¹ Then modals like 'must' and 'can' have the following semantics:

$$\|must\| = \lambda f_{\langle s, stt \rangle} \lambda g_{\langle s, stt \rangle} \lambda p_{\langle s, t \rangle} \lambda w. \forall w' \varepsilon best_{g(w)}(\cap f(w)): p(w') = 1$$

$$\|can\| = \lambda f_{\langle s, stt \rangle} \lambda g_{\langle s, stt \rangle} \lambda p_{\langle s, t \rangle} \lambda w. \exists w' \varepsilon best_{g(w)}(\cap f(w)): p(w') = 1^{12}$$

Turning back to 3-5, we'll suppose that 'allow' has a semantics essentially like 'can' except that things will look a bit different since we will define semantic values relative to a context and world below, in part due to the fact that 'I', 'allow' and 'Traditionally' are contextually sensitive. In 3, where c is the context of utterance, the modal base is a contextually determined circumstantial modal base f_c . Where w_c is the world of the context, we have $f_c(w_c) = \{\{w: \text{the speaker of } c \text{ is a condemned prisoner in } w\}\}$. Hence, $\cap f_c(w_c)$ is the set of worlds in which the speaker of 3 is a condemned prisoner, as we assumed he was in w_c .

We'll assume a context c is a four-tuple of a world w_c , a modal base f_c , a speaker s_c and a tradition t_c : $\langle w_c, f_c, s_c, t_c \rangle$. In 3 'Traditionally' taken relative to context provides the ordering source for the modal 'allow'. Traditions, like t_c , are functions from a world w to the set of propositions constituting

¹¹ I am taking propositions to be sets of worlds here. $\cap f(w)$ is of course the intersection of the propositions in $f(w)$.

¹² Kratzer [1991] has conversational backgrounds as points of evaluation, so that the interpretation function is relative to a pair of modal bases. Here, following Hacquard [2010], I have them as arguments of the modals.

that tradition in w . The idea is that a tradition, like the prison tradition invoked by 3, can have different contents at different worlds. Let ‘Trad’ be the adverb ‘traditionally’:

$$\|\text{Trad}\|^{c,w} = t_c(w)$$

$$\|\text{Allow}\|^{c,w} = \lambda p_{\langle s,t \rangle} \lambda g_{\langle stt \rangle} . \exists w' \varepsilon \text{best}_g(\cap f_c(w)) : p(w') = 1$$

Note that $t_c(w)$ is a set of propositions and that the type of the variable g in the clause for ‘Allow’ is that of a set of propositions. Here we artificially build into the semantics of ‘Allow’ that context supplies it with a modal base (f_c) but no ordering source since that is what happens in 3 (with ‘Traditionally’ taken relative to context providing the ordering source). This is obviously artificial since an ordering source could be supplied by context and a modal base could be provided by overt linguistic material, but it is fine for our purposes.

$\|\text{I eat whatever I want for my last meal}\|^{c,w} = 1$ iff s_c eats whatever s_c wants for his last meal in w ;
otherwise $= 0$

Finally, for the composition rule for ‘Allow’ and its sentential complement, we’ll use a version of Heim and Kratzer’s [1998] *Intensional Functional Application (IFA)*:¹³

$$\text{For any sentence } \phi, \|\text{Allow}(\phi)\|^{c,w} = \|\text{Allow}\|^{c,w}(\lambda w' . \|\phi\|^{c,w'})$$

3 in our formalism is represented as follows:

3F. Trad(Allow(I eat whatever I want for my last meal))

$$\|\text{Trad}(\text{Allow}(\text{I eat whatever I want for my last meal}))\|^{c,w} =$$

$$\|\text{Trad}\|^{c,w}(\|\text{Allow}(\text{I eat whatever I want for my last meal})\|^{c,w}) = \text{(by IFA)}$$

$$\|\text{Trad}\|^{c,w}(\|\text{Allow}\|^{c,w}(\lambda w' . \|\text{I eat whatever I want for my last meal}\|^{c,w'})) =$$

$$\|\text{Trad}\|^{c,w}(\|\text{Allow}\|^{c,w}(\lambda w' . s_c \text{ eats whatever } s_c \text{ wants for his last meal in } w')) = \text{(by FA)}$$

$$\|\text{Trad}\|^{c,w}(\lambda g_{\langle stt \rangle} . \exists w'' \varepsilon \text{best}_g(\cap f_c(w)) : (\lambda w' . s_c \text{ eats whatever } s_c \text{ wants for his last meal in } w')(w'') = 1) = \text{(by FA)}$$

$$1 \text{ iff } \exists w'' \varepsilon \text{best}_{t_c(w)}(\cap f_c(w)) : (\lambda w' . s_c \text{ eats whatever } s_c \text{ wants for his last meal in } w')(w'') = 1.$$

¹³ P. 308

This last line gives the conditions under which 3F is true relative to c, w . In evaluating 3F relative to c, w_c , recall that we assumed $\cap f_c(w_c)$ was the set of worlds in which the speaker of 3 is a condemned prisoner (we assumed that the only proposition in $f_c(w_c)$ is the proposition that the speaker of c is a condemned prisoner, so that $\cap f_c(w_c)$ is the set of worlds in which that proposition is true). Then 3F is true relative to c, w_c iff there is a world w' that is in $\text{best}_{tc(w_c)}(\cap f_c(w_c))$ such that s_c eats whatever s_c wants for his last meal in w' . Presumably there *is* a world w' in $\text{best}_{tc(w_c)}(\cap f_c(w_c))$ such that s_c is a condemned prisoner in w' (since s_c is a condemned prisoner in *every* world in $\cap f_c(w_c)$) and s_c eats whatever he wants for his last meal in w' . So 3 is true relative to c, w_c . Hence, as I indicated if a Kratzer-style account of modals is correct, we can explain why 3 seems true even though the tradition in question says nothing about the speaker: 3 *is* true!

The regulative example 4 containing a name instead of 'I' works essentially same way as 3. To treat the regulative example 5 containing a quantifier, we first assume that the modal base in the context of utterance c of 5 (f_c) is the function that assigns to w_c the set of propositions $\{p \mid p = \text{the proposition that } o \text{ is a condemned prisoner, for some man in this room } o \text{ in } w_c\}$. Hence every world w in $\cap f_c(w_c)$ is a world in which every man o in this room in w_c is a condemned prisoner in w . We then extend the formalism above as follows (h is an assignment of individuals to variables):

Syntax

If ϕ is a formula and u is a variable, $\wedge u[\phi]$ is a set term.

If $\wedge u[\phi]$ is a set term, $\text{Every} \wedge u[\phi]$ is a quantifier.

If Q is a quantifier and $\wedge u[\phi]$ is a set term, $Q(\wedge u[\phi])$ is a sentence.

Semantics

$\|\text{Trad}\|^{c,w,h} = t_c(w)$

$\|\text{Allow}\|^{c,w,h} = \lambda p_{\langle s,t \rangle} \lambda g_{\langle stt \rangle} . \exists w' \in \text{best}_g(\cap f_c(w)) : p(w') = 1$

$\|\text{Every}\|^{c,w,h} = \lambda P_{\langle e,t \rangle} \lambda Q_{\langle e,t \rangle} . \|P_{\langle e,t \rangle}\|^{c,w,h} \subseteq \|Q_{\langle e,t \rangle}\|^{c,w,h}$

$\|\wedge u[\phi]\|^{c,w,h} = \{o : \|\phi\|^{c,w,h,o/u} = 1\}$

where ho/u is the assignment like h except for assigning o to u. As before we have the analogue of IFA:

For any sentence ϕ , $\|\text{Allow}(\phi)\|^{c,w,h} = \|\text{Allow}\|^{c,w,h}(\lambda w'. \|\phi\|^{c,w',h})$

The reading of 5 where the universal quantifier takes wide scope over ‘traditionally’ is regimented as follows

5F. $\text{Every } \wedge x[x \text{ is-a-man-in-this-room}](\wedge y[\text{Trad}(\text{Allow}(y \text{ eats-whatever-y-wants-for-his-last-meal}))])$

Arguably, this reading is true when evaluated relative to the context c and w_c .¹⁴

$\|\text{Every } \wedge x[x \text{ is-a-man-in-this-room}](\wedge y[\text{Trad}(\text{Allow}(y \text{ eats-whatever-y-wants-for-his-last-meal}))])\|^{c,w,h} =$

$\|\text{Every } \wedge x[x \text{ is-a-man-in-this-room}]\|^{c,w,h} (\|\wedge y[\text{Trad}(\text{Allow}(y \text{ eats-whatever-y-wants-for-his-last-meal}))]\|^{c,w,h}) =$

$\|\text{Every}\|^{c,w,h} (\|\wedge x[x \text{ is-a-man-in-this-room}]\|^{c,w,h}) (\|\wedge y[\text{Trad}(\text{Allow}(y \text{ eats-whatever-y-wants-for-his-last-meal}))]\|^{c,w,h}) =$

$\|\text{Every}\|^{c,w,h} (\|\wedge x[x \text{ is-a-man-in-this-room}]\|^{c,w,h}) (\{o: \|\text{Trad}(\text{Allow}(y \text{ eats-whatever-y-wants-for-his-last-meal}))\|^{c,w,ho/y}=1\}) =$

$\|\text{Every}\|^{c,w,h} (\|\wedge x[x \text{ is-a-man-in-this-room}]\|^{c,w,h}) (\{o: \|\text{Trad}\|^{c,w,ho/y} (\|\text{Allow}(y \text{ eats-whatever-y-wants-for-his-last-meal})\|^{c,w,ho/y}=1)\}) =$

$\|\text{Every}\|^{c,w,h} (\|\wedge x[x \text{ is-a-man-in-this-room}]\|^{c,w,h}) (\{o: \|\text{Trad}\|^{c,w,ho/y} (\|\text{Allow}\|^{c,w,ho/y}(\lambda w'. \|(y \text{ eats-whatever-y-wants-for-his-last-meal})\|^{c,w',ho/y}=1)\}) =$

$\|\text{Every}\|^{c,w,h} (\|\wedge x[x \text{ is-a-man-in-this-room}]\|^{c,w,h}) (\{o: \|\text{Trad}\|^{c,w,ho/y} (\|\text{Allow}\|^{c,w,ho/y}(\lambda w'. o \text{ eats-whatever-o-wants-for-his-last-meal in } w'))=1\}) =$

$\|\text{Every}\|^{c,w,h} (\|\wedge x[x \text{ is-a-man-in-this-room}]\|^{c,w,h}) (\{o: \|\text{Trad}\|^{c,w,ho/y} (\lambda g_{\langle \text{stt} \rangle} . \exists w'' \varepsilon \text{ best}_g(\cap f_c(w)): (\lambda w'. o \text{ eats-whatever-o-wants-for-his-last-meal in } w'')(w''))=1\}) =$

$\|\text{Every}\|^{c,w,h} (\|\wedge x[x \text{ is-a-man-in-this-room}]\|^{c,w,h}) (\{o: \exists w'' \varepsilon \text{ best}_{t_c(w)}(\cap f_c(w)): (\lambda w'. o \text{ eats-whatever-o-wants-for-his-last-meal in } w'')(w'')=1\}) =$

$\|\text{Every}\|^{c,w,h} (\{o: \|x \text{ is-a-man-in-this-room}\|^{c,w,ho/x}=1\}) (\{o: \exists w'' \varepsilon \text{ best}_{t_c(w)}(\cap f_c(w)): (\lambda w'. o \text{ eats-whatever-o-wants-for-his-last-meal in } w'')(w'')=1\}) =$

$\|\text{Every}\|^{c,w,h} (\{o: o \text{ is-a-man-in-this-room in } w\}) (\{o: \exists w'' \varepsilon \text{ best}_{t_c(w)}(\cap f_c(w)): (\lambda w'. o \text{ eats-whatever-o-wants-for-his-last-meal in } w'')(w'')=1\}) =$

1 iff $\{o: o \text{ is-a-man-in-this-room in } w\} \subseteq \{o: \exists w'' \varepsilon \text{ best}_{t_c(w)}(\cap f_c(w)): (\lambda w'. o \text{ eats-whatever-o-wants-for-his-last-meal in } w'')(w'')=1\}$

¹⁴ I actually think it is arguable that the reading on which the universal quantifier scopes under ‘traditionally’ and ‘allow’ is true at c , w_c as well, given the right choice of the modal base. But it is easier to see with 5F, so we’ll go with that.

So 5F evaluated relative to c , w_c , is true iff the set of men in this room in w_c is a subset of the set of individuals o such that there is a world w' in $\text{best}_{t_c(w_c)}(\cap f_c(w_c))$ in which o eats whatever he wants for his last meal in w' . Recall that $\cap f_c(w_c)$ is the set of worlds w in which each man o in this room in w_c is a condemned prisoner in w . The worlds in $\text{best}_{t_c(w_c)}(\cap f_c(w_c))$ are those in $\cap f_c(w_c)$ in which the “most” propositions in the set $t_c(w_c)$ (the prison tradition in w_c) hold. So 5F evaluated relative to c , w_c , is true iff the set of men in this room in w_c is a subset of the set of individuals o such that there is a world w' in which all the men in this room in w_c are condemned prisoners in w' , all of the propositions in the prison tradition in w_c hold in w' and in which o eats whatever he wants for his last meal in w' . These seem to be the intuitively correct truth conditions of 5 relative to the context c and w_c . Further, these truth conditions seem to obtain. So again, we explain why 5 read as 5F seems true.

3. Modal examples

As was the case with regulative examples, we can get descriptive readings of modal examples containing names or quantifiers rather than indexicals.¹⁵ Taking names first:

7. (uttered to Steve after he answered the doorbell hastily in a very bad part of town, where a friend—
Josh—turned out to be at the door (sentence (a) uttered pointing at Josh))

a. Are you crazy? He could have been a murderer.

b. Are you crazy? Josh could have been a murderer.

¹⁵ That descriptive readings can arise in modal examples with names was independently noticed by Hunter [2010] and King [2009]. King [2009] is a precursor to the present paper, and though it was never published it was presented at the Inland Northwest Philosophy Conference, Washington State University and University of Idaho, April 30-May 3 2010, a meeting of Zoltan Szabo’s graduate seminar in philosophy of language at Yale in fall 2010, the University of St. Andrews, Arché/CSMN Workshop/Mini-Course on Propositions and the Aim of Semantics, May 17-20 2011, the University of Siena Cognitive Science Conference, Siena, Italy, June 14-15 2011, the Conference on Content, Context and Conversation at University of Gottingen, Germany June 24-25, 2011, and the Logic and Cognitive Science Initiative Conference on Meaning in Context, at North Carolina State University, September 23-24, 2011. I thank the audiences for helpful discussion. Though Hunter, following Nunberg [1993] and Elbourne [2008], notices that (singular) names do not generate descriptive readings in attempted Q adverb examples (see below), her account of how descriptive readings of Q adverb examples with indexicals arise does not explain why such readings don’t arise with names instead of indexicals. If her account of how descriptive readings of Q adverb examples with indexicals arise were correct, for all she says there is no reason attempted Q adverb examples with names wouldn’t have descriptive readings (see Hunter [2010] pp. 131-33). The observation that one can generate regulative and modal examples with quantifiers is new with me so far as I know.

Clearly, 7b, like 7a, has a reading on which it doesn't attribute to Josh the property of possibly being a murderer. On this reading, both sentences convey something like the claim that the person who just rang the doorbell could have been a murderer (instead of Josh). Just as the relevant reading of 3 could be true even if Tracey knows that Glenn isn't a murderer, so the relevant reading of 7a/b could be true even if Steve knows Josh isn't a murderer.¹⁶

Turning now to modal examples involving quantifiers, suppose that I live in a very bad part of town where there are lots of murders. Most people in my neighborhood take precautions and are suspicious of strangers. You come to visit me one day and I have many knocks on my door, each of which I immediately answer without hesitation. Each visitor turns out to be a harmless student. Despite this, you scold me saying:

8. You really must be more careful. Every student who visited you today could have been a murderer.

The second sentence of 8 has a reading on which it conveys something like the claim that for all we knew, the roles occupied by the students who in fact visited me today (the roles of knocking on my door at various times) were instead occupied by murderers. On the relevant reading, the second sentence of 8 could be true even if I knew of each student visitor that he/she is not a murderer. On the descriptive readings of 1 and 7a,b, these latter sentences too assert that the role that in fact was occupied by Josh/Glenn (knocking at the door, etc.) for all the relevant parties knew was occupied instead by a murderer. The only difference between the relevant readings of 1 and 7a/b on the one hand and 8 on the other, is that the latter makes an assertion about *many* roles, presumably due to the presence of the quantifier, whereas the former make an assertion about a *single* role. It seems to me that these readings

¹⁶ I was surprised to find that in Nunberg [1993] note 34 he admits that there are cases in which modal examples containing names instead of indexicals have descriptive readings. However, Nunberg thinks that such examples require what he calls (secondary) *deixis*, by which he seems to mean that I am required to demonstrate the bearer of the name and thereby demonstrate some contextually salient role he/she is filling. But this is incorrect. Suppose I witness Steve hastily opening the door to find harmless Josh as described above. I hold my tongue, but later that night when Josh's visit today comes up, I say: 'You really must be more careful in answering your door. Josh could have been a murderer.' The descriptive reading is present and so no *deixis*, secondary or otherwise, is required to generate it.

are sufficiently similar that we can call the relevant reading of 8 its *descriptive reading* and can assume that the readings of 1, 7a,b and 8 are produced by the same mechanism.

An additional point about modal examples is that descriptive readings like those present in modal examples arise in intensional contexts produced by expressions other than modals, as others have noticed.¹⁷

First, consider examples involving verbs of propositional attitude. Suppose I burst into my apartment startling my wife Annie who wasn't expecting me. When I ask her why she was startled, she replies:

9. I thought you were an intruder.¹⁸

Here the sentence is naturally read not as conveying the claim that Annie believed me to be an intruder, but rather something like the claim that she thought the person bursting into the apartment was an intruder. The phenomenon here is strikingly similar to the descriptive reading of 1 above.

We see the same phenomenon with counterfactuals. Again, suppose Jeff bursts into Annie and Jeff's apartment unexpectedly. Glenn, who was with Annie, says to Annie indicating Jeff:

10. If he had been an intruder, we would have been in trouble.

This sentence has a reading on which it conveys the claim that if the person who burst in unexpectedly had been an intruder, Annie and Glenn would have been in trouble (and not that if Jeff had been an intruder, they would have been in trouble).

Finally, we see the same phenomenon with examples involving tense. Suppose the current chairperson of the board of a company we are on, Bill, is a white male. Discussing the importance of diversity, and the political climate, you say indicating the current chairperson:

11. In five years, he won't be a white male.¹⁹

¹⁷ E.g. Sæbø [2015] makes a similar observation.

¹⁸ Recanati [1993] (p. 301) attributes an example of this sort to Nunberg [1990]. Bezuidenhout [1997] mentions examples of this sort as well.

¹⁹ Nunberg [1993] mentions an example of this sort, attributing it to a cartoon by William Hamilton.

This sentence has a reading on which it conveys the claim that in five years the chairperson won't be a white male (and not that in five years Bill won't be a white male).

Though I won't go through the details, in the case of attitude ascriptions, counterfactuals and tense, we can get descriptive readings in sentences that contain names and quantifiers instead of indexicals just as we do with modal examples. Having demonstrated that we get the same phenomena with attitude ascriptions, counterfactuals and tense that we get with modal examples, I propose henceforth to concentrate on modal examples. The idea is that what we say here goes for the similar examples involving attitude ascriptions, counterfactuals and tense just considered.

A positive account of modal examples must explain how descriptive readings arise in the sentences considered above containing names, indexicals and even quantifiers. In the case of regulative examples, I claimed that the names, indexicals and quantifiers were functioning normally in sentences with descriptive readings. But in the case of modal examples, there is reason to think these expressions are functioning in an unusual manner. As we saw in the case of 1 and 7, the *salient roles* occupied by the semantic values (relative to parameters) of 'You' (Glenn), 'He' (Josh) and 'Josh' (Josh) in the context of utterance are being evoked. This is reflected in the fact that natural paraphrases of these sentences in the situations described make these roles explicit. For example, a natural paraphrase of 1 in the situation described is as follows:

1P. *The person knocking at the front door* could have been a murderer (instead of Glenn).

I've italicized the material in 1P characterizing the salient role occupied by Glenn in the context of utterance and implicitly evoked in 1 on its descriptive reading. Similar remarks apply to 7 and 8, except that in 8 multiple roles occupied by the visiting students (*being the person knocking at the door at t_1 , being the person knocking at the door at t_2* etc.) are evoked. We'll model these roles as *individual concepts*: functions from situations to individuals. In the case of 1, the relevant role/individual concept is a function that maps a situation s to the unique individual (if any) knocking on the relevant door in s . It seems that in some sense, the indexical, name and quantifier in 1, 7 and 8, respectively, are introducing the relevant roles/individual concepts if only because in 1 and 7 the semantic values (relative to

parameters) of those expressions occupy the relevant roles in the context of utterance and in 8 the objects being quantified over (student visitors) occupy the relevant roles in the context of utterance. So again, the indexical, name and quantifier appear to behaving in an unusual manner in 1, 7 and 8, respectively, by introducing the relevant roles.

As to what exactly is occurring in 1, 7 and 8 on their descriptive readings, I claim that on these readings, the interpretation of the sentence the modal embeds is systematically *shifted*. This occurs by shifting the interpretations of (some) sub-sentential expressions and then composing the interpretations of the sub-sentential expressions to yield the shifted interpretation of the embedded sentence, which the modal then acts on in the usual way. In the case of modal examples containing indexicals and names, like 1 and 7, the shifted interpretation of the sentence ‘could’ embeds results from shifting the interpretation of the name or indexical.²⁰ In such cases, the shift amounts to the name or indexical being interpreted as the individual concept capturing the salient role played in the context of utterance by the usual interpretation/semantic value (relative to parameters) of the name or indexical.²¹ In the case of 1, the shifted interpretation of ‘You’ is the individual concept capturing the salient role played by Glenn (the semantic value of ‘You’ relative to parameters) in the context of utterance: the function mapping a situation s to the unique person (if any) knocking on the relevant door in s . For quantified examples like 8, the nuclear scope of the quantifier has its interpretation shifted in such a way that the roles occupied by the objects in the extension of the restrictor in the context of utterance come into play in evaluating it. In 8, those objects are the students who visited today and the roles/individual concepts are things like *being the person knocking on the door at t_1 , being the person knocking on the door at t_2* , etc. These ideas are formally implemented in the following semantics that I call *Shifty Semantics*:

²⁰ Though the only names or indexicals in the sentence ‘could’ embeds whose interpretations shift are those in subject position. In a sentence like ‘You could have been a murderer who wanted to kill me’ in the Tracey/Glenn situation, the meaning of ‘me’ remains unshifted and refers to Tracey as usual.

²¹ Really, the name or indexical is interpreted as the *denotation* of this individual concept relative to the relevant situation. Interested readers should consult the formal semantics below.

Let L be a language containing the following expressions with the following semantic values relative to a context c , a situation s , and a variable assignment g . Here I take a context to include a speaker, location and situation, where s_c is the situation determined by the context c .²² In s_c , the speaker of c is at the location of c :

$\|I\|^{c,s,g} = \text{the speaker of } c$

$\|Glenn\|^{c,s,g} = Glenn$ ²³

$\|be\ a\ murderer\|^{c,s,g} = \lambda o. o\ is\ a\ murderer\ in\ s.$

I and $Glenn$ are *singular terms*. We need to assign to the semantic value of a singular term relative to c,s,g an *individual concept*: a partial function from situations to individuals. This function captures the *salient role* (if any) played in s_c by the semantic value relative to c,s,g of the singular term.²⁴ It maps any situation s' to the individual (if any) playing the role in s' played in s_c by the semantic value of the singular term relative to c,s,g . Let IC_c be the partial function that assigns to any object o the individual concept capturing the salient role (if any) o plays in s_c . If an object o plays no salient role in s_c , or isn't even "in" s_c , $IC_c(o)$ is undefined.

IC_c assigns to the semantic value of $Glenn$ relative to c,s,g the individual concept γ_c capturing the salient role (if any) $Glenn$ plays in s_c . As such, this function is constrained as follows: $\gamma_c(s_c) = \|Glenn\|^{c,s,g} = Glenn$. (Similar remarks apply to $\|I\|^{c,s,g}$.) If c is the context in which Shane chastises Tracey for hastily opening the door after Glenn knocked by saying 'Glenn could have been a murderer', $IC_c(\|Glenn\|^{c,s,g}) = \delta_c$ would be the individual concept mapping any situation s' to the person (if any) knocking at the door in s' .

The idea we are going to implement is that descriptive readings of various modal examples result from *shifting the interpretation* of various expressions. Define the *shifted interpretation of a singular term relative to c, s and g* as follows:

²² Situations are larger or smaller parts of possible worlds. Possible worlds are maximal situations.

²³ For simplicity, I assume that $\|Glenn\|^{c,s,g} = Glenn$ even if $Glenn$ is not "in" the situation s or context c .

²⁴ I assume that situations determine what, if any, salient role is played by any individual "in" them.

$$\llbracket \text{Glenn} \rrbracket^{c,s,g} = \text{IC}_c(\llbracket \text{Glenn} \rrbracket^{c,s,g})(s)$$

$$\llbracket \text{I} \rrbracket^{c,s,g} = \text{IC}_c(\llbracket \text{I} \rrbracket^{c,s,g})(s)$$

Note that since $\llbracket \text{Glenn} \rrbracket^{c,s,g} = \llbracket \text{Glenn} \rrbracket^{c,s',g}$ for all s, s' , $\text{IC}_c(\llbracket \text{Glenn} \rrbracket^{c,s,g}) = \text{IC}_c(\llbracket \text{Glenn} \rrbracket^{c,s',g})$ for all s, s' .

Next, we have a simple (unshifted) semantics for *could*, where it takes as argument a function from situations to truth-values (a proposition) and $s \approx s'$ means that s' is accessible from s :

$$\llbracket \text{could} \rrbracket^{c,s,g} = \lambda p_{\langle s,t \rangle} . \exists s' (s \approx s' \text{ and } p_{\langle s,t \rangle}(s') = 1); \text{ otherwise, } 0.$$

The *shifted interpretation of a sentence containing (only) singular terms, modals and predicates relative to c, s, g* is the result of employing the shifted interpretation of the subject position singular term in it.²⁵

Hence:

$$\llbracket \text{Glenn be a murderer} \rrbracket^{c,s,g} = \llbracket \text{be a murderer} \rrbracket^{c,s,g}(\llbracket \text{Glenn} \rrbracket^{c,s,g}) = \llbracket \text{be a murderer} \rrbracket^{c,s,g}(\text{IC}_c(\llbracket \text{Glenn} \rrbracket^{c,s,g})(s)).$$

Now consider the truth conditions we assign on the shifted interpretation to

(A) Glenn could have been a murderer.

that we claim captures its descriptive reading (similar remarks apply to ‘I could have been a murderer’).

In our language, (A) is regimented as:

(ALF) could[Glenn be a murderer]

$$\llbracket \text{could[Glenn be a murderer]} \rrbracket^{c,s,g} = \llbracket \text{could} \rrbracket^{c,s,g}(\lambda s' . \llbracket \text{Glenn be a murderer} \rrbracket^{c,s',g}) = \llbracket \text{could} \rrbracket^{c,s,g}(\lambda s' . \llbracket \text{be a murderer} \rrbracket^{c,s',g}(\llbracket \text{Glenn} \rrbracket^{c,s',g})) = \llbracket \text{could} \rrbracket^{c,s,g}(\lambda s' . \llbracket \text{be a murderer} \rrbracket^{c,s',g}(\text{IC}_c(\llbracket \text{Glenn} \rrbracket^{c,s',g})(s')))) = 1$$

$$\text{iff } \exists s'' (s \approx s'' \ \& \ \llbracket \text{be a murderer} \rrbracket^{c,s'',g}(\text{IC}_c(\llbracket \text{Glenn} \rrbracket^{c,s'',g})(s'')) = 1).$$

Glossed roughly, the sentence is true relative to c, s, g iff the individual concept capturing the salient role Glenn is playing in s_c (*being a person knocking on the door*) maps some situation s' accessible from s to a murderer in s' . This intuitively captures the descriptive reading of ‘Glenn could have been a murderer’ in the context described, where we evaluate (ALF) at c, s_c, g .

²⁵ We assume that such sentences are things like ‘Glenn is a murderer’, ‘Glenn could have been a murderer’, etc. Singular terms not in subject position are interpreted normally. See note 20 above.

Turning to our quantified modal example, I repeat it here:

(B) Every student who visited you today could have been a murderer.

First, the semantic value of *student* relative to c, s, g :

$\|student\|^{c,s,g} = \lambda o. o \text{ is a student in } s$

Call $\{o: \|student\|^{c,s,g}(o)=1\}$ the extension of *student* relative to c, s, g . We want to assign to every member of the extension of *student* relative to c, s, g an individual concept capturing the salient role (if any) it occupies in s_c . In our example, the roles in question were *knocking on the door at t_1* , *knocking on the door at t_2* and so on. Each student visitor uniquely occupied one of these roles in the context of utterance. As before, these roles are identified with (partial) functions from a situation s to the unique individual (if any) knocking on the door at t_n in s . As before, IC_c is a partial function assigning any object o an individual concept capturing the salient role, if any, o plays in s_c . It assigns such individual concepts to members of the extension of *student* relative to c, s, g assuming they occupied salient roles in s_c .

To treat the quantified example we once again define shifted interpretations of various expressions:

$\|x \text{ be a murderer}\|^{c,s,g}=1 \text{ iff } \|be a murderer\|^{c,s,g}(IC_c(g(x)))(s)=1$

Note that the shifted interpretation of *x be a murderer* relative to c, s, g assumes that $g(x)$ has been associated with an individual concept ($IC_c(g(x))$) capturing the role played by $g(x)$ in s_c . If that is not the case (i.e. if $IC_c(g(x))$ is undefined), $\|x \text{ be a murderer}\|^{c,s,g}$ is undefined. Similarly, if $IC_c(g(x))$ isn't defined on s , $\|x \text{ be a murderer}\|^{c,s,g}$ is undefined. But the case that is of concern to us is one in which we are evaluating our sentence relative to c, s_c, g and in which each student in s_c occupies a salient role/satisfies an individual concept in s_c . In such a case, $IC_c(g(x))$ will be defined when $g(x)$ is a student in s_c . Of course, the crucial point is that instead of interpreting the variable in the usual way—as $g(x)$ —in $\|x \text{ be a murderer}\|^{c,s,g}$ it gets interpreted as $IC_c(g(x))(s)$ (the thing occupying in s the role that $g(x)$ occupied in s_c).

Next, we need to define the shifted interpretations of a couple more expressions:

$\|could[x \text{ be a murderer}]\|^{c,s,g} = \|could\|^{c,s,g}(\lambda s'. \|x \text{ be a murderer}\|^{c,s',g}) =$

$\| \text{could} \|^{c,s,g}(\lambda s'. \| \text{be a murderer} \|^{c,s',g}(\text{IC}_c(g(x))(s')))) = 1$ iff

$\exists s''(s \approx s'' \ \& \ \| \text{be a murderer} \|^{c,s'',g}(\text{IC}_c(g(x))(s'')) = 1)$.

$\forall \lambda x [\text{could}[x \text{ be a murderer}]] \setminus^{c,s,g} = \lambda o. \setminus \text{could}[x \text{ be a murderer}] \setminus^{c,s,go/x}$

where go/x is the assignment like g except that it assigns o to x

(B) is regimented in our language as follows:

(BLF) Every student $[\lambda x [\text{could}[x \text{ be a murderer}]]]$ ²⁶

Finally, here is the shifted interpretation of this sentence yielding the descriptive reading, where for simplicity we treat *every* syncategorematically:

$\setminus \text{Every student } \lambda x [\text{could}[x \text{ be a murderer}]] \setminus^{c,s,g} = 1$ iff for every o such that $\| \text{student} \|^{c,s,g}(o) = 1$,

$\setminus \lambda x [\text{could}[x \text{ be a murderer}]] \setminus^{c,s,g}(o) = 1$

These truth conditions might seem wrong until one notes the following:

$\setminus \lambda x [\text{could}[x \text{ be a murderer}]] \setminus^{c,s,g}(o) = \setminus \text{could}[x \text{ be a murderer}] \setminus^{c,s,go/x} = \| \text{could} \|^{c,s,go/x}$

$(\lambda s'. \setminus \lambda x \text{ be a murderer} \setminus^{c,s',go/x}) = \| \text{could} \|^{c,s,go/x}(\lambda s'. (\| \text{be a murderer} \|^{c,s',go/x}(\text{IC}_c(go/x(x))(s'))))$

$= \| \text{could} \|^{c,s,go/x}(\lambda s'. \| \text{be a murderer} \|^{c,s',go/x}(\text{IC}_c(o)(s')))) = 1$ iff

$\exists s''(s \approx s'' \ \& \ \| \text{be a murderer} \|^{c,s'',go/x}(\text{IC}_c(o)(s'')) = 1)$.

This means that it can be that $\setminus \lambda x [\text{could}[x \text{ be a murderer}]] \setminus^{c,s,g}(o) = 1$ even though there is no s' , $s \approx s'$ such that o is a murderer in s' !

A rough gloss of the truth conditions of (BLF) relative to c , s and g is this:

$\setminus \text{Every student } \lambda x [\text{could}[x \text{ be a murderer}]] \setminus^{c,s,g} = 1$ iff for every student o in s and its associated individual concept $\text{IC}_c(o)$, $\exists s' (s \approx s' \ \& \ \| \text{be a murderer} \|^{c,s',g}(\text{IC}_c(o)(s')) = 1)$

This does seem to intuitively capture the descriptive reading of our quantified modal example when

(BLF) is evaluated relative to c, s, g .

One final note. On the semantics presented here for quantified modal examples, the objects being quantified over evoke distinct roles. This is slightly obscured by the present example since the roles are

²⁶ For simplicity, I ignore the relative clause in (B).

so similar (*knocking at the door at t_1 , knocking at the door at t_2 , etc.*). But this means our account can handle examples where the relevant roles are quite distinct, like:

(C) Everyone I met today could have been a murderer.

on the reading on which it claims that person 1 who I met today was my neighbor at the door, and the person at the door could have been a murderer; and person 2 who I met today was my friend hiding behind a tree, and the person hiding behind a tree could have been a murderer and so on.²⁷

Shifty Semantics delivers intuitively correct descriptive readings of our modal examples including quantificational examples like 8. That's good as far as it goes, but a number of puzzling questions about modal examples remain. First, a strange feature of modal examples that I have suppressed to this point: it appears that when one moves away from sentences of a very specific syntactic structure, the descriptive readings become unavailable or significantly degraded. The favored form for modal examples is:

12. $I/N/Q$ could have been $a(n) F/the F/N$.²⁸

where I is an indexical, N is a name, Q is a quantifier, $a(n) F$ is an indefinite and $the F$ is a definite description. Thus we have:

12a. He could have been a murderer.

12b. Ted could have been a murderer.

12c. Every student who visited today could have been a murderer.

12d. You could have been the murderer at large.

12e. You could have been Ross.

For 12e, imagine Annie explaining why she rushed to put her robe on when her husband entered the room, where Ross is a houseguest. Now consider the following:

²⁷ Thanks to Sam Carter for helpful discussion here.

²⁸ As I mention below, modals other than 'could' can figure in felicitous modal examples that are otherwise of 12's form. We can also apparently get felicitous modal examples with adjectives instead of $a(n)F/The F/N$, as in 'You could have been dangerous'. Still, the favored syntactic structure for felicitous modal examples is highly constrained.

13a. A mob boss could have paid Ted to kill me.

13b. A mob boss could have paid him [indicating Ted] to kill me.

Suppose these are uttered by Annie explaining why she was hesitant to open the door when unbeknownst to her Ted, whom she knows not to be in the employ of a mob boss, was knocking. It is very hard to get descriptive readings here on which e.g. 13a conveys the claim that a mob boss could have paid the person knocking at the door to kill Annie. Further confirmation of this point comes from comparing the following to 12d, where we imagine it is known that there is a murderer at large and I am explaining why I hesitated to open the door when you knocked (again, assume I knew you were not a murderer):

13c. The murderer at large could have been you.

Whereas 12d easily allows the descriptive reading on which it conveys something like the claim that the person knocking at the door could have been the murderer at large (instead of you), 13c simply does not allow such a reading. The minimal pair consisting of 12d and 13c provides powerful evidence that descriptive readings only arise in modal examples of a very restricted syntactic form.

Though descriptive readings of modal examples are degraded when we move away from sentences of a specific syntactic structure, it should be mentioned that we see no such degradation in the case of regulative or Q adverb examples. Descriptive readings are robust in the following examples, where we have moved the relevant pronoun out of subject position:

14a. Prison traditions allow him [indicating a condemned prisoner] to have whatever he likes for his last meal.

14b. The Cardinals always elect him [indicating the Pope] in the Sistine Chapel.

Obviously, this is somewhat puzzling behavior by modal examples.

Two other features of modal examples are worth mentioning in this regard. First, as we saw, verbs of attitude, counterfactuals, and tense all allow readings just like the descriptive readings of modal examples and we have assumed that all these readings are explained in the same way. Second, many English modals of different flavors (epistemic, metaphysical, deontic) allow descriptive readings; and anecdotal evidence I have received about modals in a variety of other languages suggests that modals in

many, many languages allow descriptive readings. Indeed, I have yet to find a language whose modals definitely disallow descriptive readings, though again this is merely anecdotal evidence.

So though my Shifty Semantics for modal examples is good as far as it goes, I think the remaining challenges concerning modal examples are these. First, explain why descriptive readings are present only in sentences of a fairly specific syntactic structure. Second, explain why the readings are present for at least many English modals, modals in a wide variety of other languages and in other intensional constructions (verbs of attitude, counterfactuals and tense). As to the latter point, there seems to be something about intensional constructions that optionally licenses these readings. So though we have managed to give a formal semantics for the descriptive readings of modal examples, we certainly have not answered all the questions they give rise to.

4. Q adverb examples

A first interesting feature of Q adverb examples is that they are hard to generate with ‘I’, ‘you’, ‘we’, names and quantifiers. Consider the following:

15. (uttered pointing at the Vice President) ‘He is usually a member of the same party as the President.’²⁹
16. (uttered by the Vice President) ‘I am usually a member of the same party as the President.’
17. (uttered to the Vice President) ‘You are usually a member of the same party as the President.’
18. (uttered by a Cabinet member) ‘We are usually members of the same party as the President.’
19. ‘Pence is usually a member of the same party as the President.’

Though 15 has a descriptive reading on which it conveys something like the claim that the Vice President is usually a member of the same party as the President, 16-19 do not have such readings or at least they are extremely hard to get.³⁰ It is worth noting that the indexicals that work best in Q adverb examples are those like ‘she’, ‘he’, ‘they’ and ‘it’ that have anaphoric uses.

²⁹ A similar example occurs in Nunberg [1993].

³⁰ Nunberg [1993] and Elbourne [2008] both note that attempted Q adverb examples with names instead of indexicals don’t have descriptive readings. But they take this to show that *no* examples with names instead of indexicals have descriptive readings. Of course, I claim regulative examples and modal examples can be constructed with names instead of indexicals.

Second, there is evidence that the indexicals in Q adverb examples are *not* functioning as terms *referring* to the relevant individuals. The following is infelicitous when we give the first conjunct the descriptive reading (uttered pointing at the Pope):

20. *He's usually Italian and was ordained a Catholic Priest in 1969.

But if 'He' in the first conjunct referred to Jorge Bergoglio, we would expect it to be fine. The second conjunct would simply (truly!) predicate *being ordained a Catholic Priest in 1969* of Jorge Bergoglio.

A third feature of Q adverb examples is that it is hard to get descriptive readings in sentences that result from removing the Q adverb from a Q adverb example (uttered pointing at the Pope):

2-. He is Italian.

Though 2 clearly has a descriptive reading on which it conveys the claim that the Pope is usually Italian, there is reason to think 2- is very hard to hear as conveying the claim that the Pope is Italian. First, the sentence doesn't intuitively convey the general claim that the Pope is Italian. Second, if the man I am pointing at is an imposter, the truth or falsity of the sentence seems to depend on whether *he* is Italian and not on whether the Pope, wherever he is, is Italian.

Finally, Q adverb examples can be hard to generate even using expressions that can be used to generate them in other cases, and even though the relevant role (in 2, *being the Pope*) is highly salient. Suppose I have a guest and you knock at the door of my apartment, which is in a bad part of town. I answer without hesitating and my guest wonders how I could be so careless. Indicating you, she says:

21. He could have been a murderer!

Assume that I know that you are not a murderer. It is easy to get the descriptive reading of the modal example here on which it conveys something like the claim that the person at the door could have been a murderer. This suggests that the role of *being the person at the door* is highly salient. However, suppose in that same situation, I indicate you and attempt to explain myself by saying

22. *He's never a murderer.

It is very hard to hear 22 as conveying the claim that the person at my door never turns out to be a murderer. Hence it is very hard to get a descriptive reading here, even though we have seen that we can

get felicitous Q adverb examples with descriptive readings containing ‘he’ just as 22 does (e.g. see 2 above) and we can use the modal example 21 in this situation. Hence, in some situations though we can generate a modal example, we cannot generate the corresponding Q adverb example.

To begin to sketch our positive account of Q adverb examples, consider the following example of discourse anaphora (numerical subscripts indicate anaphoric connections):

23. The Pope₁ is the head of the Roman Catholic Church. He’s₁ usually Italian.

The second sentence here clearly has a descriptive reading. How does it come about? Let’s assume that the definite description in the first sentence of 23 is a generalized quantifier. On some theories of discourse anaphora, when an anaphoric pronoun is anaphoric on a quantifier in another sentence, the pronoun itself has the semantics of a quantifier.³¹ Let’s suppose that in this case, the anaphoric pronoun has the semantics of the quantifier/description that is its antecedent.³² On such a theory of anaphora, the second sentence of 23 will be equivalent to ‘The Pope is usually Italian’.³³ On the reading where the pronoun qua quantifier takes narrow scope under ‘usually’, we will get the descriptive reading.³⁴

Now we can get the same effect without explicitly uttering the antecedent for the pronoun.

Suppose you and I mutually recognize that we are looking at a big sign that says ‘The Pope!’. Surely, I can say

24. He’s usually Italian.

and again have the sentence interpreted the way it is in 23. It seems clear that the same mechanism is at work here as in 23. To take things one final step further, suppose we mutually recognize that we are looking at a picture of the Pope or even a Pope bobble head. Again, I could utter 24 and have it

³¹ The CDQ account of pronominal anaphora originally suggested in Wilson [1984] and subsequently elaborated and defended in King [1987, 1991, 1994, 2004] is of this sort. So is the version of a D type account originally articulated and defended by Davies [1981] and later defended by Neale [1990].

³² Other options are possible, but this is the simplest. I don’t want to get bogged down in complex issues about the details of the semantics of these sorts of anaphoric pronouns.

³³ Anyone who doesn’t like the theories of anaphora or definite descriptions I am appealing to here can plug in her favorite accounts that yield something like this equivalence.

³⁴ We can also get the other reading where the second sentence would assert of the Pope, that he is usually Italian. This is all to the good, since there is such a reading.

interpreted the way the same sentence is in 23 and again it seems that the same mechanism must be at work. How should we think of this last case? Well, in 23 the linguistic antecedent of the pronoun licenses it with the relevant reading. In this last case it would seem that the picture or bobble head makes the role of being the Pope salient; and that is sufficient to license the pronoun with the same interpretation that the anaphoric pronoun has in 23. Because the pronoun here has the same interpretation as the anaphoric pronoun in 23, yet has no explicit linguistic antecedent, I'll call the phenomenon involved in cases like the bobble head or picture cases instances of *implicit anaphora*.

Lest the reader be skeptical of the claim that an anaphoric pronoun that is usually licensed by a linguistic antecedent can be licensed in context in some other way, let me point out that there are other instances of processes that are generally linguistically triggered, but sometimes can be triggered in context in other ways. One good example is NP deletion. Generally, NP deletion requires an identical NP antecedent, as in:

25. Joanna bought some books and Stella bought some too.

However, sometimes one can get NP deletion without an explicit linguistic antecedent. Elbourne [2005] mentions the case of two people being in a yard filled with barking dogs, where neither has said anything.³⁵ One person then says

26. Harry's is particularly noisy.

meaning Harry's *dog* is particularly noisy. The utterance is felicitous. The presence and salience of the dog(s) suffices to license deletion of the NP despite the lack of explicit linguistic antecedent.

The same points can be made regarding VP ellipsis. As was the case with NP deletion, VP ellipsis generally requires an identical VP antecedent.³⁶

³⁵ Elbourne attributes the example to Lasnik and Saito [1992], who disagree with the felicity judgment. I side with Elbourne on the data here.

³⁶ Though there is debate about whether the identity is syntactical or semantical (requiring sameness of meaning).

Consider the following example:

A: Do you think they will like me?

B: Of course they will.

The ellipsed VP is read as 'like you', which means the same in B's mouth as 'like me' does in A's mouth.

27. Isabel will bring cake and Amy will too.

However, here again VP ellipsis can be licensed in context with no explicit antecedent. Imagine that children are lined up entering their swimming class and as each enters, he or she is given the opportunity to jump off the high dive. We are watching silently as the first child declines the offer to jump. My niece Eliza is next in line. Knowing her cautious nature, I say to you:

28. Eliza won't either.

meaning that Eliza won't *jump off the high dive* either. The utterance is felicitous. Somehow the first child saliently not jumping off the high dive licenses the VP ellipsis.

So NP deletion and VP ellipsis are both phenomena that are paradigmatically licensed linguistically by the presence of an explicit linguistic antecedent, but in some cases can also be licensed in context nonlinguistically. This provides ample precedent for the claim that the latter is what is going on in cases of implicit anaphora. It is worth noting here that NP deletion and VP ellipsis without explicit antecedents can be somewhat hard to get. For example, if we are mutually aware that we are both looking at a bunch of books and neither of us have said anything, if I say 'Ernie wrote some.' trying to convey the claim that Ernie wrote some books, the result is infelicitous. If implicit anaphora works the same way, it too will sometimes be hard to get.

It is probably clear that I am claiming that our Q adverb example 2 is also a case of implicit anaphora. Here the Pope himself makes the Pope role salient and licenses the pronoun with the same interpretation it has in our earlier example with an explicit linguistic antecedent (23 above).

Understanding Q adverb examples as instances of implicit anaphora explains the four points noted earlier about such examples. On the first point, if Q adverb examples are instances of implicit anaphora, we would only expect to get such examples with indexicals that can be used anaphorically.³⁷ And that is just what we noted: they are fairly easy to generate with 'he', 'she', 'it' and 'they', but hard to generate with 'I', 'we', 'you', names and quantifiers. As to the second point, we noticed that in Q adverb

³⁷ This will be qualified in Section 5.

examples, indexicals are not expressions referring to the relevant individuals. Our account explains this, since the pronouns in such cases, like the cases of discourse anaphora in which the pronouns have the same interpretation, have the semantic significance of quantifiers taking narrow scope relative to Q adverbs. Third, we noticed that it was hard to get descriptive readings of indexicals in sentences like our Q adverb examples except that they lack Q adverbs. Again, our account explains this. Implicit anaphora, like NP deletion and VP ellipsis without an antecedent, is hard to get. One is greatly helped by the Q adverb, especially when the reading resulting from implicit anaphora makes more sense than if we interpret the indexical as a referring expression. So consider 2 again: the implicit anaphora reading, on which we are claiming that more often than not, the Pope is Italian, is just more plausible and makes more sense than the reading on which we are claiming that Jorge Bergoglio is more often than not Italian.³⁸

That said, nothing in the account I've sketched suggests that it would be *impossible* to get implicit anaphora in cases of sentences *not* containing Q adverbs. Thus, if Loar [1976] is right that, encountering Smith foully murdered, I can say 'He's insane' and have the pronoun have the significance of 'Smith's murderer' used attributively, it would be plausible that the explanation is that we have implicit anaphora here too.

As to the final point, we noted that Q adverb examples can be hard to generate in some situations where we *can* generate modal examples in those very situations. The explanation of this final point is more complex than the explanations of the previous points. As we have observed, our modal examples and Q adverb examples involving indexicals, two of which are repeated here,

³⁸ A reviewer of an earlier version of the present paper claimed that in order for a Q adverb example to have a descriptive reading, one must employ a predicate such that it doesn't make sense to say that a particular individual usually or always or etc. satisfies it in the way it doesn't make sense to say that a particular individual is usually Italian. Hunter [2010] suggests something similar (pp. 128-9). But this is false. Suppose we mutually recognize that the Pope appears before us in full Pope regalia. I can say 'He is usually very humble.' where this can have the descriptive reading on which I convey the claim that more often than not we have a very humble Pope. But it can also be used to convey the claim that Jorge Bergoglio is more often than not very humble. Consider the following two discourses (pointing at the Pope on both cases):

"He's usually Italian and usually very humble."

"He's from Argentina and usually very humble."

1. (uttered by Tracey to Glenn, who she just let in the door, explaining why she didn't answer the door sooner) 'You could have been a murderer!'

2. (uttered pointing at the Pope) 'He is usually Italian.'

both involve *roles* played in the context of utterance by the semantic values of the indexicals (relative to parameters).³⁹ In the case of 1, the role is something like *being the person knocking at the door* and in 2 it is *being the Pope*. In both cases these roles are relevant to the truth conditions of the descriptive readings: the descriptive reading of 1 is true iff for all Tracey knew, *the person knocking at the door* was a murderer instead of Glenn; and the descriptive reading of 2 is true iff *the Pope* is more often than not Italian. However, there are differences in the sorts of roles the two sorts of examples require, with the result that though some roles work for both kinds of examples, some roles work for modal examples but not Q adverb examples.⁴⁰

The first obvious difference in the roles used by the two kinds of examples is that modals quantify over worlds and so modal examples like 1 have descriptive readings that require for their truth that the role occupied by *o* in the world of the context of utterance is occupied by a different object in a different world. However, Q adverbs quantify over times or cases, and so Q adverb examples require roles that are filled by different objects at different times or in different cases.⁴¹ This means that a role that was only occupied once, but is occupied by different objects in different worlds works for modal examples but not Q adverb examples. For example, pointing at Yuri Gagarin after he just returned from being the first man in space, where it is known that the American space program was not far behind, I can say

29. He might have been an American.

³⁹ Of course modal examples containing names and quantifiers involve roles as well. The former involve the role occupied by the semantic value of the name (relative to parameters) in the context of utterance and the latter involve the roles occupied by the objects being quantified over in the context of utterance.

⁴⁰ It is not clear to me that there are roles that work for Q adverb examples but not for modal examples.

⁴¹ Hunter [2010] essentially makes this point (pp. 145-47). In talking of *cases* here, I have in mind an example like the case of the husband whose wife is cheating on him and is seen at a party obliviously chatting happily with his wife's lover, when I say pointing at the husband: 'It is like they say: he's always the last to know.' Here I quantify over *husbands whose wives are cheating* even if that role is occupied by different men at the same time.

and convey the descriptive reading to the effect that the first man in space might have been American.

But the analogous Q adverb example is terrible:

30. *He's sometimes American.

Presumably this is because the role of *being the first man in space* is only occupied once in the actual world.

On the other hand, there are roles that work in both modal and Q adverb examples. Suppose a new chairman of the board has just been selected. It was a close decision and though a white male, Bill, was selected a woman came close to getting the nod. Looking at the newly selected chairman, I can say both of the following:

31a. He could have been a woman.

31b. He's always a white male.

and convey the claims that the chairman might have been a woman (and not that Bill might have been) and that the chairman is always a white male. Presumably, the reason the role of *being the chairman* works in both kinds of examples is that different people fill the chairman role at different times and the role of being the chairman is filled by different people in different worlds.⁴²

More interestingly, we find that certain roles don't work well for Q adverb examples, with the result that we can find cases in which a modal example works perfectly but an analogous Q adverb example employing the same role is infelicitous, as we saw with 21 and 22 above. Here are two additional examples.

Suppose Mary is a waitress and needs someone tall to help get something off a high shelf. All her fellow employees are short. Mary would ask a tall diner to help her, but all the current diners are short. Let this all be common ground. Mary is told that a new diner who she hasn't seen just sat down at table 15, which Mary generally serves. Mary rushes off to table 15 to see the new diner, hoping he is tall. He turns out to be short, but when Mary is asked why she rushed to table 15 to see the new diner, she says

⁴² It is arguable that there are actually slightly different roles evoked in 31a and 31b: for 31a, it may be something like *being the current chairman* and for 31b *being chairman (at some time or another)*.

32. He might have been tall.

Here the modal example has a descriptive reading. However, if Mary having seen the new, short diner at table 15 says dejectedly:

33. *He is usually tall.

this is infelicitous. Thus, we cannot get the descriptive reading of the attempted Q adverb example here (even if in fact solo diners at table 15 are more often than not tall).

For another example of this sort, suppose Antonia suggests to Felicia that they go to an upscale bar where Antonia claims it is likely single and unattached Felicia will meet a man she is interested in. They go and Felicia is approached by a very unattractive man who is very unintelligent. Felicia is clearly not interested in him and signals to Antonia that they should leave. Sensing Felicia's irritation with the whole experience, Antonia says:

34. He could have been smart and handsome.

thereby conveying the claim that a smart handsome man might have approached Felicia at the bar rather than the unattractive, unintelligent man who in fact approached her. But if Antonia says

35. *He's usually smart and handsome.

trying to convey the claim that more often than not when she brings female friends to the bar, they are approached by smart, handsome men, she fails and the result is infelicity.

Our examples suggest that Q adverb examples work best with roles that are in some sense permanent, well-known, socially established roles, like *being the Pope*, *being the chairman of the board*, *being the winner of the Westminster Kennel Club Dog Show*, and *being the Speaker of the House*. They work poorly with roles that are *not* permanent, well known and socially established but are instead in some sense "determined in context" merely by someone playing that role in the context, like *being the person knocking on the door*, *being the diner at table 15*, and *being the man approaching my friend in the bar*. I think that our claim that Q adverb examples are instances of implicit anaphora goes a fair way towards explaining this behavior. Consider again our case of discourse anaphora involving 'The Pope' from above and our Q adverb example 2:

23. The Pope₁ is the head of the Roman Catholic Church. He's₁ usually Italian.

2. (uttered pointing at the Pope) He's usually Italian.

Note that the antecedent in 23 has a generic feel. This is crucial if the second sentence of 23 is to have a descriptive reading, as the following example shows:

23'. *The Pope was ordained in 1969. He's usually Italian.

The second sentence of 23' must be read as making a claim about Jorge Bergoglio and so is infelicitous.

Now the thought is that in the case of 2, the observed presence of the Pope occupying the well-known and established Pope role (in full Pope regalia) provides conversational participants access to the semantic value of the generic description in 23, or something very much like it, and this licenses interpreting the pronoun in 2 the way the pronoun in 23 is interpreted. As previously suggested, this interpretation is reinforced by the fact that it is clear that the speaker of 2 is unlikely to intend his utterance to be about Jorge Bergoglio. Now consider the analogue of 23 for example 35 above where we have infelicity:

36. The man who approaches Antonia's friend in the bar is (generally) bold. He's usually smart and handsome.

Once again, we need the antecedent description to have a generic-like reading. The problem is that it is hard to get generic-like readings of descriptions like 'The man who approaches Antonia's friend in the bar.' Such readings simply aren't very accessible. I think this means that the presence of a man in the bar occupying the role of *being the man who approaches Antonia's friend in the bar* simply isn't enough to allow conversational participants to access the semantic value of 'The man who approaches Antonia's friend in the bar' on its generic-like reading, or something very much like it. But then that means that the pronoun in 35 will not be licensed with the interpretation the pronoun in 36 has. Hence, 35 is infelicitous and has no descriptive reading. Exactly similar remarks apply to the other attempts at Q adverb examples (22, 33) that are infelicitous and lack descriptive readings.

For the roles that work well in Q adverb examples, it is easy to get generic readings of the corresponding definite descriptions:

37. The Pope is the head of the Roman Catholic Church.

38. The chairman of the board runs board meetings.
39. The winner of the Westminster Kennel Club Dog Show receives trophies but no cash prize.
40. The Speaker of the House is elected by a roll call vote.

This means that such readings are quite accessible. In turn, this means that the presence of an object saliently occupying one of these roles in the context of utterance can provide conversational participants access to the semantic value of the relevant generic definite description, or something very like it, licensing the pronoun in a Q adverb example with an interpretation exactly like the one it would have if it had a generic definite description as its explicit linguistic antecedent:

- 37a. (Pointing at the Pope) He's usually Italian.
- 38a. (Pointing at the chairman of the board at a board meeting) He's usually a white male.
- 39a. (Pointing at this year's winner of the Westminster Kennel Club Dog Show) It's usually a terrier.
- 40a. (Pointing at the Speaker of the House). She's usually a member of a different party than the President.

Hence, as promised our account of Q adverb examples as instances of implicit anaphora explains why, unlike modal examples, they don't work well with certain types of roles and why they do work well with other kinds of roles.

5. 'Today', 'here', etc.

I said the indexicals that work best in Q adverb examples are those that have anaphoric uses. But there are counterexamples to this claim. 'Today', 'tomorrow', 'here', 'now' and other indexicals generate something like Q adverb examples, as the following example shows, but they do not function as anaphors:⁴³

41. (uttered on December 31, 2019) 'Today is always the biggest party day of the year.'⁴⁴

⁴³ Some of these expressions have uses that are in some sense anaphoric. Here is an example with 'now': 'Napoleon had crossed the Russian border and *now* he headed towards the Urals.' However, the anaphoric uses we are interested in and which we claim explain Q adverb examples are uses in which the anaphoric expression has as its antecedent a quantifier in another sentence. The expressions in question don't have anaphoric uses of this sort so far as I can see. Thanks to Sam Carter for discussion.

⁴⁴ This sort of example is from Nunberg [2004].

Here ‘today’ cannot be understood as referring to December 31, 2019, but rather is used to talk about December 31, so that 41 is equivalent to:

41a. December 31 is always the biggest party day of the year.

However, ‘today’ readily can be used to talk about things like December 31, the last day of school, Friday or other such things *even in simple sentences not containing devices like adverbs of quantification*, as the following examples show. Each example containing ‘today’ conveys a claim equivalent to that expressed by the *b* examples:

42a. (uttered on the last day of school for the year) ‘Today is my favorite day of the year.’

42b. *‘The last day of school is my favorite day of the year.’*

43a. (uttered on Friday) ‘Today is my favorite day of the week.’

43b. *‘Friday is my favorite day of the week.’*

44a. (uttered November 9, 2019) ‘Today is the day the Berlin Wall fell in 1989.’

44b. *‘November 9 is the day the Berlin Wall fell in 1989.’*

Let’s put the fact that ‘today’ in the *a* sentences above can have the significance of the italicized expressions in the *b* sentences by saying that ‘today’ (and ‘here’, ‘now’ etc.) can have *descriptive readings in simple sentences* (i.e. sentences lacking elements like ‘traditionally’, ‘could have been’ and ‘always’). Further, 42-44 make it quite clear that it is easy to do this with ‘today’ (similarly for ‘here’, ‘now’ etc.). So the explanation of the descriptive reading in the Q adverb example 41 is that ‘today’ is in general capable of having descriptive readings, as in 42-44, and in 41 it has the significance of ‘December 31’.⁴⁵ ‘Today’ having this significance then interacts with the Q adverb in predictable ways, so that 41 ends up conveying a claim equivalent to 41a. This is how descriptive readings arise in Q adverb examples containing indexicals that easily have descriptive readings in simple sentences (‘today’, ‘here’, ‘now’ etc.).⁴⁶

⁴⁵ See King [2001] for an account of the semantics of expressions like ‘December 31’.

⁴⁶ Consider ‘John put his wine rack *here*’ uttered by me in my house showing where John’s wine rack is in his; and consider ‘*Now* is my favorite time of day’ uttered by me at sunset.

Given that expressions like ‘today’ have descriptive readings in even simple sentences, it won’t be surprising to find that we can generate regulative and modal examples with them as well:

45. (uttered on Christmas) ‘Today is traditionally the day that one is allowed to open one’s presents.’

46. (uttered on July 3 while claiming that the Declaration of Independence might have been adopted one day earlier) ‘Today could have been Independence Day.’

Here again, I claim that the descriptive readings result from ‘today’ having the sort of descriptive reading that it is capable of having in simple sentences like 42-44 above. Its having this sort of significance then interacts with ‘Traditionally’ and the modal verb phrase in 45 and 46. In 46, for example, ‘today’ has the significance of ‘July 3’ taking narrow scope under the modal auxiliary with the result that 46 is true iff it might have been that July 3 was Independence Day.

In saying that the descriptive readings of 41, 45 and 46 are generated by ‘today’ having the sort of descriptive reading it has in simple sentences like 42-44, and this descriptive reading interacting with regulatives, modal verb phrases and Q adverbs, we are in effect claiming that these descriptive readings are generated *differently* from the descriptive readings of regulative, modal and Q adverb examples discussed in previous sections of the paper. I expect the reader to be skeptical of this claim. Is there any support for the claim that the descriptive readings of 41, 45 and 46 are produced by a different mechanism than the ones that produce the descriptive readings of our other examples? I believe there is.

First, as indicated, ‘today’, ‘now’ and so on have descriptive readings in simple sentences, whereas the indexicals in our other examples generally do not.⁴⁷ This latter point was noted for examples like 2- above. I submit that when we consider sentences like our regulative examples and modal examples but that lack regulatives and modal verb phrases, there is no hint of a descriptive reading:

47. (uttered by the condemned prisoner) ‘I am ordering whatever I like for my last meal.’

48. (uttered by Glenn after Tracey opens the door) ‘I am (not) a murderer.’

⁴⁷ Though we did leave open the possibility that we could get implicit anaphora in simple sentences like Loar’s ‘He’s insane’. However, we saw that implicit anaphora is sometimes hard to pull off even in sentences with Q adverbs (see 22, 33 and 35 above). By contrast, as we have seen it is easy to get descriptive readings of ‘today’, ‘now’, etc. with or without Q adverbs and the like.

This at least shows that we could not explain the descriptive readings of our other regulative, modal and Q adverb examples the way we have explained 41, 45 and 46. Given the plausibility of the latter explanation (if ‘today’ has descriptive readings in simple sentences, surely it will have them in regulative, modal and Q adverb examples too), a different explanation of the former examples is required.

Second, ‘today’ etc. behave differently in modal examples than other indexicals. In our discussion of modal examples above, we noted that the descriptive readings arise primarily with sentences of a very specific structure, namely that of 12 above. As we saw, the further we move away from sentences of this structure, the harder it is to get descriptive readings (see 13a-c above). Further, in those examples, only the expressions in subject position can receive descriptive readings. However, these things are simply not the case with ‘today’, ‘here’ and etc., as the following example shows (assume we are looking at the current date on your iPhone):

49. (uttered March 30, 2019) ‘Ronald Reagan could have died today in 1981.’

Here the descriptive reading, on which ‘today’ has the significance of ‘March 30’, is quite robust.

Further, sentences of the form of 12 with names or indexicals that are not ‘today’ etc. are always paraphrasable as

12a. *The G* could have been anF/the F/N (instead of I/N).

where *I/N* is the relevant name or indexical and *The G* is fixed in the context of utterance by being the role played in the context of utterance by the semantic value (relative to parameters) of *I/N* (*the person knocking at the door* in the case of 1). So for example 1 can be paraphrased as *The person knocking at the door could have been a murderer (instead of you)*. The paraphrase shows that in such examples the role played in the context of utterance by the semantic value (relative to parameters) of the relevant name or indexical affects the truth conditions of the descriptive reading, as we saw above. However, modal examples containing ‘today’ in general don’t work in the same way, as the following example shows:

50. (uttered on July 3) ‘Today could have been Independence Day.’

Here it simply isn’t the case that the semantic value of ‘Today’ (relative to parameters) plays some role in the context of utterance that is relevant to the truth conditions of the descriptive reading. *Being July 3* is

the descriptive condition that gets contributed to the truth conditions of the descriptive reading of 50, but it isn't as though the day designated by 'Today' (relative to parameters) plays the role in the context of utterance of *being July 3* in the way that the person designated in 1 by 'You' (relative to parameters) plays the role in the context of utterance of *being the person knocking at the door*. Indeed, the idea that the semantic value of 'Today' (relative to parameters) plays the role in the context of utterance of *being July 3* doesn't even make clear sense. Yet as we saw, in the case of modal examples containing names and other indexicals, the idea that the roles played in the context of utterance by the semantic values (relative to parameters) of the names and indexicals are relevant to the truth conditions of the descriptive reading is central (similar remarks apply to modal examples containing quantifiers, where it is the roles played in the context of utterance by the objects being quantified over that are relevant). That modal examples involving 'today' behave differently from other modal examples surely is strong evidence that they are generated differently.

Finally, we noted that in regulative examples, the following is felicitous:

3+. I am traditionally allowed to eat whatever I want for my last meal and have decided on tacos.

The crucial point here was that the second conjunct is clearly predicating a property of the utterer of the sentence, which is the usual referent of 'I'. But when we try to construct such examples with 'today', where we assume that the day of utterance is the usual referent of 'today' and choose second conjuncts that predicate properties of the day of utterance, we get infelicity:

45+. (uttered on Christmas day) *'Today is traditionally the day that one is allowed to open one's presents and is unseasonably warm.'⁴⁸

⁴⁸ 'Today' and 'tomorrow' are tricky and it is easy to be misled by the data. Notice that the following is fine:

(A) (Uttered on July 3, 2011) 'Tomorrow is the day Joe defends his dissertation and is always the biggest party day of the year.'

This might seem puzzling at first given what has been said, since the first conjunct appears to make a claim about July 4, 2011 and the second conjunct makes a claim about "the calendar day" July 4. But here I think both conjuncts make claims about the calendar day July 4. Depending on July 4, 2011 is a way of depending on (a) July 4. Hence Joe is defending on July 4 and the first conjunct asserts that he is. Note that the predicate 'is the day Joe defends his dissertation' can be felicitously predicated of a calendar day: 'July 4 is the day Joe defends his dissertation and is also the day Jim Morrison died.' I think many of Hunter's [2010] examples of what she calls *co-predications* where she claims the different predications require different subjects (pp. 141-142) can be explained in this way. Note that the following is infelicitous (here I disagree with the judgment of Hunter [2010] about similar examples—p. 142) :

The fact that in all these ways, examples containing ‘today’ etc. behave differently from examples involving other indexicals provides good reason for thinking that the descriptive readings of the former are generated differently from the descriptive readings of the latter, just as we claim.

6. Sæbø’s [2015] account of descriptive readings

A number of authors have offered positive accounts of descriptive readings, including Nunberg [1993, 2004], Recanati [1993], Elbourne [2008] and Hunter [2010]. However, in a recent paper, Sæbø [2015] criticizes these accounts and others. Sæbø goes on to offer his own positive account of descriptive readings. Because I agree with Sæbø’s criticisms of these other accounts, because I take Sæbø’s positive account of descriptive readings to be the best currently on offer and because some of the criticisms I make of Sæbø’s positive account apply to these other accounts as well, I focus here on criticizing Sæbø’s positive account of descriptive readings.

Sæbø cites Hunter [2010] in noting that at least in modal examples names and definite descriptions can generate descriptive readings.⁴⁹ Here is an example of the latter that he cites from Hunter [2010]:

51. You should’ve checked the keyhole. Your mom could have been a burglar.

Here the second sentence conveys the claim that the person at the door could have been a burglar (instead of your mom). Sæbø’s view is that descriptive readings can be generated with all “referential terms” (expressions of type e): proper names, definite descriptions and indexicals.⁵⁰ Further, Sæbø recognizes that descriptive readings can be generated in sentences containing verbs of propositional attitude, counterfactuals and tense, as we noted earlier (see 9-11 above).

(B) (Uttered on July 3, 2011) ‘Tomorrow is Eliza’s seventh birthday and is always the biggest party day of the year.’

Here the predication in the first conjunct forces ‘tomorrow’ to pick out July 4, 2011 (since it is that particular day that is Eliza’s seventh birthday). But then the continuation is not possible. Note too that we can felicitously say ‘July 4 is Eliza’s seventh birthday.’ This shows, I believe, that expressions like ‘July 4’ can designate either a particular July 4 (as it does here) or the calendar day, as it does in ‘Every July 4 I go to the beach.’

⁴⁹ See my note 15.

⁵⁰ Sæbø [2015] p. 1113, 1115, 1124, 1127, 1152

Individual concepts—functions from worlds to individuals (type $\langle s, e \rangle$)—are central to Sæbø’s account of descriptive readings.⁵¹ The best way to illustrate Sæbø’s account of descriptive readings is to begin with examples involving definite descriptions. According to Sæbø, definite descriptions express individual concepts and denote individuals relative to worlds.⁵² In the case of a descriptive reading involving a definite description such as 51 above, Sæbø claims that the individual concept expressed by the definite (‘Your mom’) is “replaced” by another individual concept that is coextensional with the individual concept expressed by the definite relative to the world of the context of utterance and that is uniquely salient in the context of utterance. In this case the latter individual concept would be something like *the person who was just knocking at the door*. Following Sæbø, call this *the substitution interpretation* of the definite description (I’ll talk of the substitution interpretations of the relevant sentences as well). Hence the second sentence of 51 conveys something like the claim that the person who was just knocking at the door could have been a burglar.

Sæbø wants to implement this idea compositionally, and so wants the substitution interpretation to be the “normal” compositionally assigned semantic value of some expression in the sentence with the descriptive reading. To achieve this, he introduces a *covert substitution operator* S that can adjoin to any node of type e (names, pronouns/indexicals, definites). Its semantic value is a function from an individual concept to the denotation of an individual concept relative to a world (type $\langle \langle s, e \rangle, e \rangle$). In 51, this function takes the individual concept expressed by ‘Your mom’ as input and outputs the denotation relative to the world of evaluation of the individual concept *the person who was just knocking on the door*. Hence, the LF for the second sentence of 51 looks roughly as follows for Sæbø:⁵³

51LF. [could[[S your mom]][be a burglar]]

Sæbø’s semantic clause for S is as follows, where semantic values are assigned relative to a context c and

⁵¹ At one point, Sæbø suggests that individual concepts are functions from world/time pairs to individuals (p. 1141). But for the most part, he says they are functions from worlds to individuals (see e.g. p. 1113, 1114, 1139, 1140-41). For our purposes it doesn’t matter which option we choose, so I will go with the simpler view that individual concepts are functions from worlds to individuals.

⁵² Sæbø [2015] p. 1113 note 3.

⁵³ See the LF 65 in Sæbø’s Appendix.

index (world) j (where w_c is the world of the context):

$\|S\|^{c,j} = \lambda \delta_{\langle s,e \rangle} \cdot \epsilon_{\langle s,e \rangle}(j)$ if there is a unique salient $\epsilon_{\langle s,e \rangle}$ in c such that $\epsilon_{\langle s,e \rangle}(w_c) = \delta_{\langle s,e \rangle}(w_c)$; otherwise undefined.

Sæbø treats the epistemic modal ‘could’ as a quantifier over worlds in the standard way so that 51LF is true at c,j iff there is a world k accessible from j such that the intension of the embedded sentence (relative to c) is true at k . Given that the uniquely salient individual concept ϵ in the context of utterance c of 51 will be something like *the individual knocking at the door* and that your mom is the individual knocking at the door in w_c , $\| [S[\text{your mom}]] \|^{c,j} =$ the person knocking at the door in j . Hence, 51LF will be true at c,j iff there is a world k accessible from j where the individual knocking at the door at k is a burglar at k .

An example like 51LF will use the composition rule Intensional Functional Application (IFA):

$\| m_{\langle \langle s,a \rangle, b \rangle} n_{\langle a \rangle} \|^{c,j} = \| m_{\langle \langle s,a \rangle, b \rangle} \|^{c,j} (\lambda k. \| n_{\langle a \rangle} \|^{c,k})$

since $\| \text{your mom} \|^{c,j}$ is an individual (type e) and but $\| S \|^{c,j}$, which is type $\langle \langle s,e \rangle, e \rangle$, must compose with something of type $\langle s,e \rangle$. (Similar remarks apply to composing $[S \text{ your mom}]$ and $[be a burglar]$ and to composing *could* and $[[S \text{ your mom}][be a burglar]]$ —in each case we compose with IFA—see the Appendix of Sæbø [2015]). So using IFA, $\| S \|^{c,j}$ composes with $\lambda k. \| \text{your mom} \|^{c,k}$. When we go over to examples involving indexicals and names like

52a. [could $[[S I][be a burglar]]$]

52b. [could $[[S Glenn][be a burglar]]$]

$\| S \|^{c,j}$ composes with $\lambda j. \| I \|^{c,j}$ and $\lambda j. \| Glenn \|^{c,j}$, respectively, again by IFA and things work in the same way, though of course the latter are constant functions from worlds j to the speaker of c and Glenn, respectively.

Above I mentioned that the covert operator S can combine with any node of type e . Sæbø holds that the presence of the operator is optional, so that any sentence with type e nodes has an LF on which the operator is present at a given e node and an LF where it is not. However, the fact that in principle any e node could optionally be accompanied by the S operator makes Sæbø correctly worry about over-

generation of descriptive readings. For example, as Sæbø himself notes,⁵⁴ descriptive readings generally only seem to be present in contexts involving a modal, adverb of quantification, regulative or other similar device. Following ideas of Aloni [2005] and especially Hunter [2010], Sæbø holds that a certain amount of pragmatic pressure is required to generate the descriptive readings/substitute interpretations. He suggests that there must be something amiss about what he calls the *literal interpretation* (the interpretation resulting from the relevant e node *not* having the optional *S* operator adjoined to it). In particular, there must be some reason to disbelieve that the speaker intended to communicate the literal interpretation and some reason to believe that the speaker intended to communicate the substitution interpretation.⁵⁵ Such reasons apparently include the inconsistency, unformativeness, irrelevance or implausibility of the literal interpretation.^{56, 57} Sæbø holds that only in response to some “difficulty” with the literal interpretation do the substitution interpretations arise. To repeat, this is designed to address the worry that the optional substitution operator will generate descriptive readings not observed. Finally, though we have only discussed modal examples here, Sæbø clearly countenances applying his account to regulative examples and to Q adverb examples.⁵⁸

Turning now to criticisms of Sæbø’s account, I begin with an internal tension with the account. As we have just seen, on Sæbø’s account pragmatic pressure is required to generate substitution interpretations of the relevant sentences. Indeed, Sæbø makes it sound like the generation of a substitution interpretation is a repair strategy triggered by a problem (implausibility, inconsistency, irrelevance, etc.) with the literal interpretation. Now the substitution interpretation of a given sentence *E* is generated by *E* having the covert substitution operator *S* in its LF. But this means that *E* having the covert operator *S* in its LF needs to be triggered by there being a “difficulty” with the literal reading *E*’:

⁵⁴ p. 1117, 1119, 1152-53.

⁵⁵ p. 1139

⁵⁶ p. 1145

⁵⁷ p. 1146

⁵⁸ See the regulative example (8) p. 1116 and the discussion of Q adverb examples pp. 1148-1150. Sæbø incorrectly in my view takes regulative examples to be Q adverb examples (see 8 p. 1116, but see note 7 and p. 1149).

the sentence exactly like E except for not containing (the relevant occurrence of) *S* in its LF. The claim that an optional covert syntactical element can only occur in an LF if the LF exactly like it except for containing the operator would be problematic in some way strikes me as strained. The source of the tension is clear. On the one hand Sæbø in effect talks about the substitution interpretation being a repair strategy, which makes the generation of the interpretation sound pragmatic *à la* pragmatic repair stories told by Grice [1989b] and Stalnaker [1978]. But on the other hand, Sæbø offers a compositional semantic account of substitution interpretations in terms of his covert substitution operator. The resulting account requires attribution of unprecedented behavior to a covert syntactic element: it can occur in the LF of a sentence produced by a speaker only if the requisite pragmatic pressure is in place. This would appear to be a significant problem with the account.

To this concern, Sæbø might respond as follows.⁵⁹ All sentences with type e nodes are in principle syntactically ambiguous between an LF in which a given type e node occurs with the covert *S* operator and an LF in which the node occurs “bare” without *S*. In general, the bare reading is strongly preferred. Disambiguating to the non-bare LF requires a significant pragmatic reason for disfavoring the bare LF.

But I think this response just produces more problems for Sæbø. First, there is no explanation as to why the bare reading is strongly preferred to begin with. But surely there needs to be an explanation for this. Second, it is claimed that for any sentence with type e nodes, there will be one LF where a given e node is accompanied by the substitution operator and another where it isn't. Competent speakers must be tacitly aware of this. But that means they should be able to access the LF that includes the substitution operator at *any* given type e node even if there is no difficulty with the literal interpretation and hence no pragmatic pressure in favor of the LF with the substitution operator. Consider a similar case: ‘Every man loves a woman.’ Hearers naturally favor the reading given by the LF where ‘Every man’ has widest scope, given the unlikelihood of the other reading being intended. But as anyone who has taught logic

⁵⁹ Thanks to suggestions of Sam Carter here.

knows, it is easy enough to get hearers to access the other LF. One simply points out that the sentence also seems to have the unlikely reading on which it claims that there is some woman whom every man loves. This is generally true for sentences that are syntactically ambiguous with one reading being strongly preferred: one can still get hearers to access the dispreferred reading. But then this suggests that for any sentence with type e nodes, hearers should be able to access the reading given by the LF where a given e node is accompanied by the substitution operator. Unfortunately, this means that Sæbø has failed to address the over-generation worry after all. Every sentence with an e node should have an accessible descriptive reading where it is accompanied by the substitution operator.

A second problem with Sæbø's account concerns his treatment of regulative examples. Sæbø considers an example slightly different from Nunberg's 3 above, but it differs from 3 in no significant respects.⁶⁰ So we'll stick with 3 and alter Sæbø's remarks so that they apply to 3. Sæbø assigns 3 an LF roughly as follows:

3SLF. traditionally[[S I][be allowed to order whatever [SI] like for my last meal]]

Sæbø takes 'traditionally' to be an adverb of quantification quantifying over all situations of a certain sort: in this case, situations in which prison traditions hold and there is a unique condemned prisoner.

Here $\|[[S I]]\|^{e,j}$ is the value at j of a function δ of type $\langle s, e \rangle$ that maps a world to the unique condemned prisoner at that world. We have a minor problem here in that we want to evaluate δ at the *situations*

'traditionally' quantifies over and yet δ is a function from *worlds* to individuals, not a function from situations to individuals. Probably the best thing for Sæbø to do here is recast his individual concepts of type $\langle s, e \rangle$ as functions from situations to individuals and take worlds to be special cases of "maximally large" situations.⁶¹ For Sæbø needs individual concepts to be functions from (smaller than world sized) situations to individuals to handle examples like 3SLF and Q adverb examples generally. But since modals quantify over worlds, Sæbø needs individual concepts to be functions from worlds to individuals

⁶⁰ Sæbø's example is 'As the challenged, I am traditionally allowed the choice of weapon.'

⁶¹In my Shifty Semantics I do this myself to handle modal examples.

to handle examples like 51 above. I'll ignore this wrinkle here and continue to treat individual concepts as functions from worlds to individuals. (In the present case this is unrealistic since it would have adverbs of quantification quantifying over worlds, and so 3SLF's truth would require each world being quantified over to contain a unique condemned prisoner.)

Now recall that Sæbø's sole rule of semantic composition for the examples he treats is IFA. That means that in assigning truth conditions to 3SLF the semantic value of $[S I]$ that gets composed is not $\| [S I] \|^{c,j}$ but rather $\lambda i. \| [S I] \|^{c,i}$. This individual concept will pick out the unique condemned prisoner in each world being quantified over (those in which prison traditions are in force and in which there is a unique condemned prisoner). The sentence will be true iff in each such world the condemned prisoner is allowed to order whatever he likes for his last meal.

Unfortunately, our old friend 3+ creates problems for this account:

3+. I am traditionally allowed to order whatever I like for my last meal and have decided on tacos.

In order to get the first conjunct to have the same truth conditions as 3, once again Sæbø must have what he alleges to be the adverb of quantification 'traditionally' take wide scope over 'I am allowed to order whatever I like for my last meal'. Unfortunately, the VP's are conjoined in 3+ and then merge with 'I' ($[S I]$). So the LF Sæbø must assign to 3+ is as follows

3+SLF traditionally $\| [S I] [am\ allowed\ to\ order\ whatever\ [SI] like\ for\ my\ last\ meal\ and\ have\ decided\ on\ tacos] \|$

But this will be true iff in all worlds in which prison traditions are in force and there is a unique condemned prisoner, he is allowed to order whatever he likes for his last meal and has decided on tacos. These aren't the truth conditions for 3+: it does not require for its truth that in worlds where prison traditions hold, each condemned prisoner decides on tacos for his last meal. So our example 3+ poses real difficulties for Sæbø's account.

For reasons that need not detain us here, Sæbø thinks that we need a means of evaluating predicates (and hence definite and indefinite descriptions) that occur in the same sentence at different worlds. He gestures at the approach of von Stechow and Heim [MS] on which world variables are in the

object language and one place predicates are of type $\langle s, \langle e, t \rangle \rangle$. The precise implementation of such a view is beyond the scope of the present work and Sæbø himself doesn't worry about any particular implementation. Sæbø simply puts a *world* subscript on predicates (or definites and indefinites) indicating the world at which they will be evaluated.

Now it might be thought that Sæbø could use the resources of world variables in the object language to deliver an adequate treatment of 3+ above. After all, part of the problem with Sæbø's treatment of 3+ in terms of 3+SLF is that the predicate 'have decided on tacos' gets evaluated in each of the worlds quantified over by 'traditionally'. World variables would at least allow us to avoid this feature of 3+SLF. Hence, we could posit the following LF for 3+, where world subscripts indicate the world at which expressions are evaluated and w_0 gets assigned the world of the context of utterance:

3+SWLF. traditionally λw [[*S* I][[am allowed to order whatever [*SI*] like for my last meal]_{*w*} and [have decided on tacos]_{*w_0*}]

The worlds quantified over by 'traditionally' get fed into the lambda binder λw here but the subscript w_0 on [have decided on tacos] results in it getting evaluated at the world of utterance. However, 3+SWLF is true iff for every world w in which prison traditions hold and there is a (unique) condemned prisoner s , s is allowed to eat whatever he likes for his last meal in w and s has decided on tacos for dinner in w_0 (the world of the context of utterance). These are obviously not the truth conditions of 3+. So, 3+ poses a significant problem for Sæbø's account even if we bring in world variables in the object language.⁶²

A third difficulty with Sæbø's account of descriptive readings is that it cannot explain the fact that we can get descriptive readings with quantifiers in regulative and modal examples (see 5 and 8 above). On Sæbø's account, descriptive readings should arise only with type e expressions, since these are the only expressions the operator *S* that explains descriptive readings combines with. Hence, the fact that we get descriptive readings with quantifiers in regulative and modal examples is completely at odds

⁶² Having world variables in the object language *could* be used to assign intuitively correct truth conditions to 3+ using the Kratzer-style semantics I gave for 3. The reason world variables would work correctly for 3+ in conjunction with my semantics and not Sæbø's is that on my semantics, and not on Sæbø's, 'I' in 3 and 3+ refers to the speaker and 'traditionally' is not quantifying over worlds.

with Sæbø's account.⁶³

A fourth difficulty with Sæbø's account of descriptive readings—really a series of difficulties—is that it can't explain the differences in behavior in the different kinds of examples we noted earlier. Let's begin with a difference between modal examples and Q adverb examples. We noted that it is easy to generate felicitous modal examples in virtually any situation so long as the relevant role is highly salient. By contrast, felicitous Q adverb examples can be hard to generate even when the relevant role is highly salient. (Recall 21/22, 32/33, 34/35 above.) Nothing in Sæbø's account explains why there is this difference in behavior between modal examples and Q adverb examples. Descriptive readings allegedly arise because of the semantics of Sæbø's substitution operator and the semantics of *e* type expressions. They have nothing in particular to do with the modal elements or Q adverbs except that in the right situations such elements can help generate the required pragmatic pressure for the *S* operator, and hence descriptive readings, to be present. The problem is that the relevant pragmatic pressure *is* present in 22, 33 and 35 even though the descriptive readings don't happily arise. For example, the literal interpretation on which the substitution operator is not present and 'He' in 22 simply refers to the indicated individual (you) is strongly disfavored. For it would be very odd of the speaker to intend to communicate the claim that you are never a murderer. So to repeat, Sæbø has no explanation of the difference in behavior of modal and Q adverb examples of the sort illustrated by 21/22, 32/33 and 34/35.

A second difference in behavior between Q adverb examples and other examples that Sæbø's account is in no position to explain is that Q adverb examples cannot be generated with 'I', 'we', 'you' or names (see 16-19 above). Here I'll focus on 'I' and names. Suppose Alan's wife has been cheating on him unbeknownst to Alan, though others are aware of his wife's indiscretion. We see Alan at a party obliviously chatting happily with the man who his wife is cheating with. The first of the following sentences is uttered indicating Alan and the last is uttered by Alan after being apprised of the situation:

⁶³ Any attempt to get the descriptive readings of quantified modal examples by adjoining the *S* operator to a node containing a bound variable is ruled out on Sæbø's account since he claims that bound variables cannot be arguments to the *S* operator (p. 1140 note 20).

53a. It's like they say, he's always the last to know.⁶⁴

53b. It's like they say, Alan is always the last to know.

53c. It's like they say, I am always the last to know.

Only 53a can be used to convey the claim that the husband is always the last to know. Sæbø's account cannot explain why the substitution operator cannot be present in the LFs of 53b and c, so that we do not get descriptive readings here. Indeed, his account predicts that we *should* get descriptive readings with the substitution operator present in the LFs of 53b,c. For the requisite "pragmatic pressure" his account requires for the presence of the substitution operator is in place for 53b and c in this situation. The speaker is unlikely to intend the literal interpretations here on which 53b and c assert that *Alan* is always the last to know about infidelities. So Sæbø has no account of why we don't get descriptive readings of sentences like 53b and c, and more generally why Q adverb examples cannot be constructed with names, 'I', 'we' or 'you'.⁶⁵

A third difference in behavior in different sorts of examples that Sæbø's account cannot explain concerns a difference between regulative examples and Q adverb examples. Above we saw that examples like 3+ repeated here are felicitous:

3+. I am traditionally allowed to order whatever I like for my last meal and have decided on tacos.

The fact that the VP in the second conjunct intuitively predicates a property of the speaker of 3+ and that the result is felicitous provides evidence that 'I' in 3+ refers to the speaker as it is usually does. But as we saw, when we try an analogous continuation using a Q adverb, the result is infelicitous:

20. *He is usually Italian and was ordained a Catholic priest in 1969.

Again here the second conjunct attempts to attribute a property to what would normally be the referent of 'He' when indicating Jorge Bergoglio, but the result is *infelicitous*. Nothing in Sæbø's account explains

⁶⁴ From Nunberg [1993].

⁶⁵ This feature of Q adverb examples is one reason that we cannot give a unified account of modal and Q adverb examples by applying the Shifty Semantics we gave for modal examples to Q adverb examples. For the Shifty Semantics for modal examples precisely *does* generate descriptive readings for sentences containing 'I', 'we', 'you', names and quantifiers.

this difference in behavior. After all, Sæbø's account purports to explain the descriptive readings of both of the following by positing the presence of the substitution operator merged with both 'I' and 'He':

2. (uttered pointing at the Pope) 'He is usually Italian.'

3. (uttered by a condemned prisoner) 'I am traditionally allowed to order whatever I like for my last meal.'

But then why would the continuation 3+ be fine while the continuation 20 isn't? Sæbø has no explanation of this.

All told, then, Sæbø's account of the descriptive readings of 1-3 has many problems.

Conclusion: Semantics and Pragmatics

I conclude with some remarks about the roles of semantics and pragmatics in the descriptive readings 1-3 convey. On my view are these claims *semantically expressed* by the sentences in question? For the regulative examples, I gave a Kratzer-style semantics that delivers the relevant readings. Obviously, then, the descriptive readings are semantically expressed by the relevant sentences. However, it is a bit misleading to even talk of descriptive readings in *this* case, since the readings in question are the literal meanings of the sentence, where indexicals, names and quantifiers are all functioning as usual semantically.

As to the modal examples, we gave what looks like a compositional semantics—Shifty Semantics—for their descriptive readings. However, we also left significant questions open about the precise nature of the readings delivered by our Shifty Semantics. Still, Shifty Semantics looks so much like a compositional semantics that it seems implausible that we would ultimately say that the readings it delivers are merely pragmatically conveyed. However, further research is required here.

Finally, in the case of Q adverb examples I think we probably should say that the relevant claims are the semantic contents in context of the sentences in question, since the relevant readings are generated by interpreting the pronouns in just the way that they are *literally* interpreted in examples of discourse anaphora such as 23. After all, we compared these cases to cases of NP deletion and VP ellipsis licensed in context without linguistic antecedents. And in these latter cases, surely we do want to say that the

conveyed claims *are* the semantic contents of the relevant sentences (26, 28) in context. But then we should say the same about Q adverb examples.⁶⁶

References

- Aloni, Maria, 2005, 'A Formal Treatment of the Pragmatics of Questions and Attitudes', *Linguistics and Philosophy*, 28, 505-539.
- Bezuidenhout, Anne 1997: 'Pragmatics, Semantic Underdetermination and the Referential/Attributive Distinction', *Mind*, 106, pp. 375–409.
- Davies, Martin, 1981, *Meaning, Quantification and Necessity*, Routledge and Kegan Paul, London.
- Elbourne, Paul, 2008, 'Demonstratives as Individual Concepts', *Linguistics and Philosophy*, 31.4, 409-466.
- Elbourne, Paul, 2005, *Situations and Individuals*, MIT Press, Cambridge, MA.
- von Fintel, Kai and Irene Heim, MS, *Intensional Semantics*, manuscript, <http://web.mit.edu/fintel/fintelheim-intensional.pdf>.
- Grice, Paul, 1989a, *Studies in the Way of Words*, Harvard University Press, Cambridge, MA.
- Grice, Paul, 1989b, 'Logic and Conversation', in Grice [1989a].
- Hacquard, Valentine, 2010, 'On the event relativity of modal auxiliaries', *Natural Language Semantics* 18(1), pp. 79-114.
- Heim, Irene, MS, 'Notes on Indexicality ', Manuscript, MIT.
- Hunter, Julie, 2010, *Presuppositional Indexicals*, University of Texas at Austin Dissertation.
- King, Jeffrey C., 1987, 'Pronouns, Descriptions and the Semantics of Discourse', *Philosophical Studies* 51, 341-363.
- King, Jeffrey C., 1991, 'Instantial Terms, Anaphora and Arbitrary Objects', *Philosophical Studies* 61, 239-265.
- King, Jeffrey C., 1994, 'Anaphora and Operators', *Philosophical Perspectives*, 8, *Logic and Language*.

⁶⁶ This paper has evolved significantly over a period of years in part due to very helpful comments from many people. Thanks to Chris Barker, Simon Charlow, Sam Cumming, Gabe Greenberg, Larry Horn, Nathan Klinedinst, Annie Papreck King, Karen Lewis, Francois Recanati, Jessica Rett, Kate Ritchie, Craige Roberts, Philippe Schlenker, Una Stojnic and Zoltan Szabo for helpful comments and discussion. Much of the material herein was presented at Stockholm University, June 14, 2016 and the New York Philosophy of Language Workshop on September 24, 2018. Thanks to the audiences for very helpful discussions. Finally, a special thanks to Sam Carter and Cameron Domenico Kirk-Giannini for providing extremely insightful and detailed comments on earlier versions of the paper. My sincere apologies if I've forgotten anyone!

- King, Jeffrey C., 2001, 'Remarks on the Syntax and Semantics of Day Designators', in *Philosophical Perspectives* vol 15, J. Tomberlin (ed.), 291-333.
- King, Jeffrey C., 2004, 'Context Dependent Quantifiers and Donkey Anaphora', *New Essays in the Philosophy of Language and Mind: Canadian Journal of Philosophy Supplementary Volume 30*, Ezcurdia, Stainton, Viger eds.
- King, Jeffrey C., 2009, '“Descriptive Uses” of Indexicals and Demonstratives', unpublished ms.
- Kratzer, Angelika, 2012, *Modals and Conditionals*, Oxford University Press, New York.
- Kratzer, Angelika, 1991, 'Modality', in A. von Stechow, D Wunderlich (eds.) *Semantik: Ein internationales Handbuch zeitgenössischer Forschung*, 639-650, Berlin: de Gruyter.
- Lasnik, Howard and M. Saito, 1992, *Move α* , MIT Press, Cambridge, MA.
- Loar, Brian, 1976, 'The Semantics of Singular Terms', *Philosophical Studies*, Vol. 30, No. 6, 353-377.
- Maier, Emar, 2009, 'Proper Names and Indexicals Trigger Rigid Presuppositions', *Journal of Semantics*, 26, pp. 253–315.
- Neale, Stephen, 1990, *Descriptions*, MIT Press, Cambridge, MA.
- Nunberg, Geoffrey, 1990, 'Indexicality in Contexts', Paper delivered at the conference on Philosophy and Cognitive Science, Cerisy-la-Salle, France, June, 1990.
- Nunberg, Geoffrey, 1993, 'Indexicality and Deixis', *Linguistics and Philosophy* 16: 1-43.
- Nunberg, Geoffrey, 2004, 'Indexical Descriptions and Descriptive Indexicals', in *Descriptions and Beyond*, M. Reimer and A. Bezuidenhout (eds.), 261-279, Oxford University Press.
- Recanati, Franco, 1993, *Direct Reference*, Blackwell, Oxford
- Recanati, Francois, 2005, 'Deixis and anaphora', in Z. G. Szabo' (Ed.), *Semantics versus Pragmatics* (pp. 286–316). Oxford: Clarendon Press.
- Sæbø, Johan Kjell, 2015, 'Lessons from Descriptive Indexicals', *Mind* vol 124, 496, 1111-1161.
- Stalnaker, Robert C., 1999, *Context and Content*, Oxford University Press, New York.
- Stalnaker, Robert, 1978, 'Assertion' in *Syntax and Semantics* 9, Academic Press, New York. Reprinted in Stalnaker [1999].
- Wilson, George, 1984, 'Pronouns and Pronominal Descriptions: A New Semantical 'Category'', *Philosophical Studies* 45, 1-30.