Lessons from Descriptive Indexicals

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There are two theories of so-called *de re* readings of definite descriptions in modal contexts. On one theory, call it Theory 1, the description is evaluated at the actual world. This theory is favoured by semanticists. On the other theory, call it Theory 2, the description is replaced by another description which is evaluated at the possible worlds. This theory is favoured by philosophers. There is little tension between the two, because they rarely meet. And in many cases, predictions all but coincide.

Indexicals are a class of terms where evaluation worlds are not supposed to matter, and yet, even they seem able to have two different readings in modal contexts:

– the ordinary reading, corresponding to a *de re* reading on Theory 1, and

– a "descriptive" reading, corresponding to a *de re* reading on Theory 2.

This duplicity carries over to proper names and, crucially, to definite descriptions themselves, which can in certain circumstances be seen to have three readings, one *de re* under Theory 1, one *de re* under Theory 2 and one *de dicto*. These are circumstances where the predictions come apart after all, and they cut across all major classes of modal contexts.

I will argue, then, that the theory favoured by philosophers cannot be disregarded.

1 De re definites: two types of theories

Consider the following scenario:[1]

(1)   A large black bear broke into an Anchorage home early this morning, rummaged around like a burglar and feasted on a box of chocolates before the homeowner shot him dead with a Glock.
The bear entered the house around 2:30 a.m., according to police.
The owners were asleep when their rottweiler started barking wildly. The bedroom door was closed. Outside, the couple could hear things being knocked over. Police spokesman Lt. P. Honeman said the owners initially thought <u>the bear</u> was a burglar.

My intuition, shared by many, is that here, (2) means something like (3), more precisely, *the bear* in (2) has an interpretation that more or less coincides with a straightforward, *de dicto* interpretation of the underlined term in (3).

(2)   The owners initially thought <u>the bear</u> was a burglar.

(3)   The owners initially thought <u>the creature setting the dog barking and knocking things over</u> was a burglar.

This interpretation is not a *de dicto* reading (of *the bear*). Is it a *de re* reading?

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[1]slightly adapted from a news story in the *Anchorage Daily News* of June 2, 2006

That depends – there is no consensus on the best theory of *de re* readings.

On one type of theory, the description is evaluated in the actual world. Today, what Schwager (2011) calls the **transparent evaluation** approach dominates, especially the formulation in terms of 'free index-binding'.[2]

<div style="text-align: right">Russell (1905); Neale (2005)</div>

<div style="text-align: right">Percus (2000); von Fintel and Heim (2010): *standard solution*</div>

(4) a. $\lambda v \ldots O_v(\lambda w \ldots Q_w(c_v) \ldots) \ldots$

  b. λv the owners thought$_v$ λw the bear$_v$ was a burglar$_w$

I will subsume these theories under the label **Transparency Theory** (TT), and call the reading according to TT the **transparent interpretation**.

The interpretation of (2) which coincides with a *de dicto* interpretation of (3) is not a *de re* reading on this type of theory but on an alternative type of theory, where *de re* definite descriptions are strictly not evaluated as they stand.[3]

<div style="text-align: right">Quine (1956); Kaplan (1968); Cresswell & von Stechow (1982); Schiffer (1992)</div>

This type of theory has largely been motivated by cases where rigid designators give rise to puzzles if they are taken 'at face value', i.e., if their meaning is not in some way enriched by, e.g., some relation that the designated individual stands in to the holder of a propositional attitude.[4]

(5) a. $\lambda v \ldots O_v(\lambda w \ldots Q_w(c'_w) \ldots) \ldots$

  b. λv the owners thought$_v$
   $\lambda w\,[\,$the creature setting the dog barking and knocking things over $]_w$
   was a burglar$_w$

I will subsume these theories under the label **Substitution Theory** (ST), and call the reading according to ST the **substitute interpretation**.

It is not easy to tell the difference between ST and TT on the basis of case (1). We will see cases, however, where that is easier and where TT is counterintuitive and ST emerges as a better theory.

Those cases will be parallels to **descriptive** readings of **indexicals**.

2 Descriptive Designators

Recent work (Hunter 2010) suggests that 'descriptive indexicals' are paralleled by descriptive **proper names** and even by descriptive **definite descriptions**. Here, what corresponds to the straight reading of indexicals is the transparent interpretation, so to the extent the straight reading of the indexicals is judged counterintuitive, so must the transparent interpretation of the definites.

This already indicates that Transparency Theory is insufficient.

Moreover, in certain scenarios, the transparent interpretation can be argued to coincide with the *de dicto* interpretation and to be an absurd interpretation.

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[2] "it is broadly agreed nowadays that something essentially like the Index-Binding account must be available" (Heim 2011). An early source is Bäuerle 1983.

[3] Recent work in this tradition includes Aloni 2005, Maier 2010, and Schwager 2011.

[4] van Rooy and Zimmermann (1996: 131): "it is not only important to know what object the belief attribution is about . . . , but also *the way* the believer thinks about that object."

2.1 Descriptive Indexicals

The pronoun *I* is a 'descriptive indexical' in (6) or (7).

Nunberg (1993, 2004); Recanati (1993, 2005); Elbourne (2008); Hunter (2010)

(6) (Before the mother goat goes out, she instructs the little kids not to open the door to a stranger: "If somebody knocks, ask him to show his hoof in the window, and open the door only if you recognize the hoof as mine." But since she doesn't trust them, she decides to put them to the test. She returns and knocks, and the little kids open the door immediately. She chides them and says:)

You shouldn't have opened the door!
I could have been the Wolf!
(Heim 2004)

(7) As the challenged, I am traditionally allowed the choice of weapon.
(http://forums.nexuswar.com/)

(6) does not mean that its speaker could have been the Wolf, it means that the creature knocking on the door could have been him; by the same token, the only sensible interpretation of (7) is that in all situations in keeping with tradition concerning duels, the challengee is allowed to choose the weapon.

Bezuidenhout (1997)

> There is evidence ... in favor of the contention that *we* can have readings equivalent to those of definite descriptions. (Elbourne 2008)

Such a contention may not be uncontroversial; Recanati (1993) favours a more pragmatic approach. Yet the intuition that the utterance is not about a certain individual but about whatever individual fills a certain role seems quite robust. Elbourne (2008) proposes a way to model this intuition compositionally without positing an ambiguity in the pronoun. His analysis is supported by independent reasons for treating pronouns as definites. But it is not sufficiently general.

In 2.2, I present examples of names with descriptive interpretations in different types of modal contexts. In 2.3, I do the same in regard to definite descriptions.

2.2 Descriptive Readings of Names

Hunter (2010: 121ff.) shows that names can have descriptive readings in modal contexts, for example, under counterfactual epistemic modals, as in (8a):

Kripke (1972): *no one other than Nixon might have been Nixon*

(8) a. Nancy Pelosi might have been a Republican.
     b. The Speaker of the House might have been a Republican.

3

The descriptive reading is the one on which (8a) is synonymous to (8b). Below are a sample of attested cases, across a wide array of modal contexts.

(09)   After all, for all he knew, <u>Michael</u> could have been a burglar, or a murderer. (http://kalysia.livejournal.com/8383.html)

(10)   Well, I heard a noise downstairs, and I came down, and I thought <u>Justin</u> was a burglar and I hit him with a baseball bat. (http://fun140.com/quizzes/)

(11)   I had a feeling it would be a boy because I wanted it to be a girl. I wanted <u>Talea</u> to be a boy, and I got the opposite. At least I'll have one of each (boy and girl), so I'm pretty happy. (http://tuffcluff.com/news/news/newsfal05.html)

(12)   If <u>Mary</u> had been a boy then yes, I do believe England would have remained a Catholic country.

(http://www.historum.com/european-history/ 3238-katherine-aragon.html)

The name is read as 'the entity playing the part played by *a*', if *a* is the name; specifically, *the sudden intruder*, *the person making the noise downstairs*, *the baby in my womb back then*, *the child of Henry VIII by Catherine of Aragon*.

Cumming (2007): *Biron thinks Katherine is Rosaline*

All three major classes of **modal contexts** are represented here: modals ((9)), attitudes ((10), (11)), counterfactuals ((12)). True, epistemic modals like *could* can be analyzed as a kind of attitude operators, and the counterfactual in (12) is in the scope of the attitude verb *believe*. But (13) is entirely impersonal:

von Fintel and Gillies (2011)

(13)   I will tell you what would have been a true miracle: if the President was elected a Pima, Yaqui or even a Choctaw maybe. [. . .] Like I said it would have been really a true miracle if <u>Obama</u> had been a native American Indian. (http://www.polishforums.com/polonia-usa-canada-28/obama-th-president-usa-dream-fulfilled-31881/11/#msg819728)

Sloppily, this says that the closest worlds where Obama is a native American are far away. It seems clear that what is to only hold true in distant worlds is the proposition that the first minority to be elected President of the United States is a native American; although the proposition based on the straightforward, rigid interpretation of the name *Obama* may also require a significant departure from actuality, this is not what is intended to count as "really a true miracle".

Stalnaker (1968); Lewis (1973)

It is less easy to find cases where the modality is factual than where it is counterfactual, but they do exist; in (24), the first occurrence of *Jesus* must be read 'the man standing before Mary Magdalene at the tomb'.

(14)   It wasn't until He called her by her own name – "Mary" – that she knew <u>Jesus</u> was Jesus. (http://www.myspace.com/viewmasterlife/blog/370683866)

2.3 Descriptive Readings of Definites

Hunter (2010) goes on to show that 'intensional reconstruction' is possible not only with indexicals and names but with definite descriptions too, as in (15).

(15)   You should've checked the peephole. <u>Your mom</u> could've been a burglar.

"I get a ... reading of [(15)] according to which it's not literally true that John's mom could have been a burglar, but that it might have been that someone else was knocking on the door and that person was a burglar." (Hunter 2010: 123)

(16) sums up a situation where the narrator has been trying to lure a moose to his hunting post by imitating a moose's love call with a birchbark trumpet; the calls he hears in response and attributes to a moose turn out to originate from an Indian in an approaching canoe imitating a moose's love call.

Ingstad (1933): *Land of Feast and Famine*

(16)   I had thought <u>the Indian</u> was a moose, and he had thought that I was.

On the intended reading, what the narrator had thought was that the creature emitting the love calls – whichever entity that was – was a moose.

Bonomi (1995)

Consider also the counterfactual (17) (the context is a discussion of a snowsled accident where a boy, driving in snowdust and straying from the trail, has hit a tree; the debate is about whether or not the tree was to blame and should be cut down, this discussant arguing that no, the driver was responsible):

(17)   What if <u>the tree</u> had been a Moose, a deer or another sled, would this still have happened? I believe it would have, ...
        (http://www.hardcoresledder.com/forums/264-manitoba/)

We are not interested in possible worlds where the individual that is actually the tree is a moose or a deer or another sled instead, we are interested in possible worlds where what obstructed the course of the snowsled driven by so-and-so at such-and-such a time was not the tree but a moose or a deer or another sled.

The transparent interpretation is particularly implausible in a case like (18).

(18)   The experienced hunter [M. B. Harshbarger] has maintained for years that she mistakenly thought <u>her husband</u> was a black bear when she shot him through the chest with a hunting rifle in the dim light of a late-summer evening in the central Newfoundland woods on 9/14/2006.
        (http://www.henrymakow.com/shoot_husband_collect_500000.html)

On that reading, the argument of *thought* is the set of worlds w such that Mary Beth Harshbarger's husband in v, the actual world, namely, Mark Harschbarger, was a black bear in w. Now for Mary Beth Harshbarger to think that is arguably irrational, since arguably, in all or at least some of the worlds w compatible with what she thought in v, Mark Harschbarger was the value of *her husband* at w. The sole sensible reading is that the dark shape she saw moving out of the forest toward the truck where she was waiting, actually her husband, was a black bear.

Hintikka (1969)

2.4 Preliminary Conclusions

The intuitions that motivate a theory of descriptive indexicals in modal contexts provide motivation for a theory of descriptive referential terms **generally**. The plain reading of the indexicals coincides with the *de re* reading of the definites under Transparency Theory while the descriptive interpretation of the indexicals coincides with the *de re* reading of the definites under Substitution Theory.[5]

Let me illustrate the parallel with a simple pair of examples, (19) and (20):[6]

(19)   I could have been a burglar.

> **Reading 1**: plain, *de re*;
> 'my brother is a burglar, so I could easily have become one myself'
> or 'I'm so deft at picking locks, I would have made a good burglar'

> **Reading 2**: descriptive, *de dicto* under substitution;
> 'the person at the front door could have been a burglar instead of me,
> so you shouldn't have opened it without first checking who was there'

(20)   The pedlar could have been a burglar.

> **Reading 1**: transparently *de re*;
> 'his brother is a burglar, so he could easily have become one himself' or
> 'he's so deft at picking locks, he would have made a good burglar'

> **Reading 2**: substitutionally *de re*, *de dicto* under substitution;
> 'the person at the front door could have been a burglar instead of a pedlar,
> so you shouldn't have opened it without first checking who was there'

The two readings of (20) differ from each other in the same manner as the two readings of (19). Hence, if the plain reading of the indexical is counterintuitive, then so is the transparent interpretation of the definite description.

Moreover, in scenarios like (18) the transparent interpretation can be argued to coincide with the *de dicto* interpretation and to be an absurd interpretation.

I conclude that Substitution Theory is indispensable, not just for indexicals but also for names and definites, indeed, for referential terms in general.

Then the question is how to formulate such a theory so as to derive the right readings in the right circumstances. It must be sufficiently general –

1. **not** tailored to a specific class of **referential terms**, and

2. **not** tailored to a specific class of **modal contexts** –

and it should also be **compositional** in the following sense:

3. the substitute interpretation should be the normal interpretation of an expression containing the referential term.

Existing proposals tend to fall short of one, two or all of these three criteria.

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[5]In addition, there is throughout a (normal) *de dicto* reading of the definite description – though this reading is often implausible, or even absurd, as in (16)–(18).

[6]There is in principle also a third, *de dicto* reading of (30), saying that there is some world w such that the pedlar in w is a burglar in w as well, a 'pedlar-burglar'.

3 Substitution Theories

There are several recent formulations of the substitution type of theory of *de re* interpretation: Aloni (2005), van Rooij (2006), Elbourne (2008), Maier (2010), Hunter (2010), Schwager (2011). All provide valuable insights, but none is both sufficiently general regarding the relevant terms and contexts and compositional.

	general as to terms	general as to contexts	compositional
Aloni (2005): *conceptual covers*	+	+	÷
van Rooij (2006): *counterparts*	(+)	+	(+)
Elbourne (2008): *deferred reference*	÷	+	+
Maier (2010): *presupposed acquaintance*	+	÷	(+)
Hunter (2010): *intensional reconstruction*	+	+	÷
Schwager (2011): *de qualitate*	+	(+)	÷

Table 1: Substitution Theories

With a view to a formulation with an unequivocal + score on all three counts, there are lessons to be drawn from all these proposals.
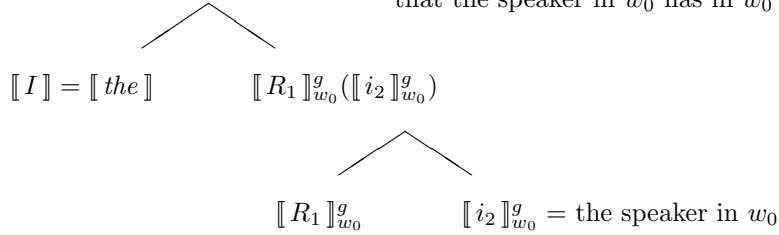
Notes on (+): for van Rooij's (2005) counterpart theory to generalize to definite descriptions, it is necessary to apply the actuality operator @ to them, and, this theory is not compositional in a narrowest sense since the counterpart function is not in the language (it is a contextual parameter). Maier's (2010) theory has a residue of noncompositionality in a new definition of presupposition binding and accommodation making reference to belief contexts. Schwager's (2011) proposal could generalize to all modal contexts but is formulated for attitudes.

We see that compositionality is the trickiest criterion: only Elbourne's analysis scores an unequivocal + on this count, and in return, it does not generalize from deictic pronouns to names or definite descriptions. But let us have a look at it.

3.1 Elbourne's (2008) formalization of Nunberg's (1993) theory

A deictic pronoun like I is decomposed into three components, or, to be exact, it has a covert argument in the form of a property $R(i)$ where the parameter i is what it naïvely denotes, and it itself acts semantically as a definite article:

(21) $[\![\,the\,]\!]([\![\,R_1\,]\!]^g_{w_0}([\![\,i_2\,]\!]^g_{w_0})) = \lambda w$ the x that has the g salient property in w that the speaker in w_0 has in w_0

$$[\![\,I\,]\!] = [\![\,the\,]\!] \qquad\qquad [\![\,R_1\,]\!]^g_{w_0}([\![\,i_2\,]\!]^g_{w_0})$$

$$[\![\,R_1\,]\!]^g_{w_0} \qquad\qquad [\![\,i_2\,]\!]^g_{w_0} = \text{the speaker in } w_0$$

R_1 is a free variable for the salient function from individuals x to properties P such that x has P in w_0, the actual world (the context world). Assume this is $\lambda x\, \lambda y\, y$ knocked on the door that x knocked on in w_0, then what is expressed by I – or, to be exact, by what meets the eye or ear as I – will be the concept λw the individual that knocked on the door the speaker knocked on in w_0.

The standard, rigid interpretation results if R_1 is set to the identity relation.

We cannot extend this analysis to proper names and definite descriptions, but we can reuse some essentials. These are:

- the bottom right node is the standard interpretation of the term, the **original individual concept**

- the top node is the **substitute** interpretation, an **individual concept coextensional** with the original one wrt. w_0

- the bottom left node is an operation that encodes (i) this coextensionality and (ii) a high degree of **context dependency**.

The mid left node, however, can be eliminated, and with it the entire mid level.

3.2 A generalized substitution operation

Note that Aloni (2005) effectively replaces one individual concept x by another: *the member y of the contextually operative "cover" such that $y(w_0) = x(w_0)$.*

Taking a cue from that, we could redefine Elbourne's R as an optional operator, S, applicable to any type e term, expressing a map from concepts δ to concepts ε – conditionally on contextual determination plus coextensionality.

(22) $[\![\,S\,]\!]^c_{v,w} = \lambda \delta_{\langle s,e \rangle}\, \varepsilon_w$ if ε is the salient individual concept in c such that $\varepsilon_v = \delta_v$ (undefined else)

The corresponding semantic tree comparable to (21) above is (23):

(23) $[\![\, S\,]\!]_{v,w}^{c}([\![\, I\,]\!]_{v}^{c}) = \varepsilon_w$ if ε is the salient individual concept in c such that
$$\varepsilon_v = [\![\, I\,]\!]_{v,v}^{c}$$

$[\![\, S\,]\!]_{v,w}^{c}$ $[\![\, I\,]\!]_{v}^{c} = \lambda w$ the speaker in v

Apply this to the occurrence of I in (24):

(24)   You shouldn't have opened the door! I could have been the Wolf!

Here several factors interact to motivate the structure in (23) and to identify a salient substitute individual concept co-valued with $[\![\, I\,]\!]_{v}^{c}$ at v:

- there is reason to distrust the literal, rigid interpretation of I;   <small>Aloni (2005): OT pragmatics</small>

- the salience of the concept of the individual who knocked on the door is enhanced by the utterance of the preceding sentence, which topicalizes the event of opening the door in reaction to an event of (someone) knocking;   <small>Glanzberg (2007) 'metasemantics'</small>

- it is evident to the discourse participants that the speaker is in actual fact the individual who knocked on the salient door;

- the term I is much more economical than the term that would have had the substitute interpretation as its literal, *de dicto* interpretation.   <small>Aloni (2005): OT pragmatics</small>

One can emulate transparent readings by setting ε to the rigid concept $\lambda w\,\delta_v$.

4   Conclusions

There are *de re* readings and there are *de re* readings of definite descriptions.

The former, *de re* in the T sense, parallel plain readings of indexicals or names. The latter, *de re* in the S sense, parallel descriptive readings of the same terms.

So, T and S are not conflicting theories of one phenomenon but complementary theories of two phenomena. – Only, S is not yet a mature theory. It remains to be seen whether a compositional formulation is realistic or descriptive readings (*de re* readings under S) should be relegated to pragmatics.

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