Description Theory and Identifying Reference

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Abstract

Both speaker reference and semantic reference are needed in order to formulate epistemic success conditions for identifying reference and the indirect reference view is generally more adequate for expressing such conditions than the direct reference view, because identification always involves identifying something as something by means of certain distinguishing properties. As both semantic and speaker reference are needed for modeling identifying reference, it doesn't make sense to prioritize Millian over descriptive content or vice versa.

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1 Introduction

As alternatives to the New Theory of Reference, description theories of reference have resurged from time to time in the past. Recent defenses of description theory can for example be found in Stanley (2001), Sosa (2001), and Hunter (2005). Against these attempts to revive description theory, the traditional direct reference view has been vigorously defended by Soames (2002, 2005) and Everett (2005). In this article, I focus on an aspect of the controversy that in my opinion has to some extent been lost in course of the recent debate: the role of identifying reference. As I will lay out, the indirect reference view is better suited than the direct reference view for making success conditions for identifying reference explicit, and these conditions are crucial for understanding the epistemic role of singular reference. However, I will also argue for the much less controversial thesis that the direct reference is in princple suited for modeling semantic reference. Since success conditions for identifying reference can only be formulated as a relation between speaker and semantic reference, both notions of reference are needed and so it doesn't make sense to prioritize one notion over the other.

The debate about direct versus indirect reference has traditionally been dominated by the question it is possible to adequately deal with the rigidity

of terms like proper names. I will only briefly address this question here for two reasons. First, it has been discussed extensively elsewhere, for example in the publications mentioned above. Second, my argument for description theory does not hinge on an affirmative answer to this question. As I will lay out in section 4, proper names are not unconditionally rigid as far as speaker reference is concerned, and in order to model an agent's subjective reference a referential expression has to be made nonrigid with respect to the doxastic modality representing the beliefs of that agent. While this can to some extent be achieved using diagonalization in a two-dimensional logic, such a solution is not fully explanatory and descriptively adequate when iterated modalities are at play. An argument against description theory based on the view that it fails to account adequately for the rigidity of indexicals and proper names can thus only be conclusive insofar as semantic reference is concerned. I will briefly sketch, by giving an example, that the traditional advantage of description theory, namely the ability to express arbitrary scope distinctions, is also well-suited for implementing the relativized rigidity view that I propose for modeling speaker reference.

The remainder of this article is divided into two parts. The first part is mainly terminological. Given the vast amount of literature on reference with sometimes diverging terminology, it is necessary to clarify some of the notions used in order to avoid potential misunderstandings. In the

second part, I argue that both notions of reference are needed for modeling identifying reference.

2   The Notion of Reference

2.1   Nonindexical Reference

The term 'reference' is used in philosophy in a rather technical sense. At least three uses of 'reference' need to be distinguished: First, it is used more or less synonymously with 'denotation' or 'designation' for expressing a relation between at least terms of a language and objects. This will henceforth be called *semantic reference*. Second, it has been used, by Strawson and others, for expressing a relation between at least speakers, terms of a language, and objects. This will henceforth be called *speaker reference*.[1] Third, at a given occasion of using a term a speaker might attempt to identify the object as the one being referred to by a term at a given situation. This will be called *identifying reference*. To give a fairly trivial example, consider the following utterance:

(1)   Alice: Bob is hungry.

Semantically, the proper name 'Bob' refers to Bob. Suppose Carol interprets this utterance and incorrectly associates Dave with the name 'Bob',

as might for example happen when she knows the name only by hearsay and has heard various descriptions of Bob that also fit Dave (according to her opinion). When Carol tries to identify the referent of 'Bob' in a given communication situation, identifying reference comes into play as a third notion. As I will lay out in more detail below, such an attempt is successful if and only if semantic referent and speaker referent are suficiently similar to each other.

There is no need to recapitulate the details of the direct reference view and the New Theory of Reference, as they have evolved from Kripke (1972), but let me briefly clarify some of the notions I will use in order to avoid potential misunderstandings. By the *New Theory of Reference* I mean the causal chain theory of reference as laid out by Kripke in *Naming and Necessity* and summarized excellently in the first chapter of (Soames, 2002). *Direct reference* is here taken as the view that terms can semantically refer directly to objects, or that speakers can refer directly to objects without having to rely on some sort of descriptive meaning or Fregean sense-like entities, or both of it. This view ranges back to Mill's distinction between denotation and connotation in (Mill, 1843, 1994) and has, among many others, been defended by Salmon (1986), Kaplan (1989), and Soames (1998, 2002). *Millianism* is here understood in a more specific sense as any implementation of the direct reference view, according to which the

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semantic content of a singular term is given by a rigid constant. Related to that, a *Russellian proposition* is an n-tupel consisting of constants for the referents of singular terms and other entities like predicates. A term is *rigid* in a formal logical language if and only if it is semantically evaluated independently of any preceding modal operators and rigid in a natural language when there is compelling linguistic or philosophical evidence that the semantic representation of the term ought to be to rigid in the language of analysis (semantic representation language).[2] Although all directly referential terms are rigid, the converse doesn't hold. For example, a property might pick out one and the same object independently of any modal operators and yet reference by means of that property would not be direct, since this object is determined by virtue of the property. Thus, rigidity and direct reference may not be conflated (Kaplan, 1989, 495).

A *description theory of reference* is any position in the philosophy of language according to which the semantic referent or the speaker referent of a singular term respectively is determined by a set of descriptive conditions, which can formally be expressed by a iota operator or a corresponding quantifier that uniquely determines the referent in a given context by means of certain predicates. Plural terms like 'we' are roughly handled the same way, except that the corresponding quantifier picks out a group of referents instead of one, but since there are many open questions regarding

plural reference I will in the following stick to singular reference as usual.

The term *descriptive meaning* (or content) will be used to indicate that contrary to the direct reference view part of the meaning of a term is given by descriptive conditions on the speaker or semantic referent. This point of view is an implementation of the more general *indirect reference view*. According to this view, the semantic referent or the speaker referent (or both) is determined by certain properties it is has or is supposed to have, whereas the direct reference view denies one or both of these possibilities. For historical reasons *Frege–Russell view* is a common term for the indirect reference position. As is well-known, Russell regarded the meaning of an ordinary proper name a definite description in disguise (or, in earlier writings like Russell (1905), something similar to this like a denoting concept) and Frege (1980, 58: fn.) suggested in a famous footnote that the (non-Fregean) meaning of a proper name is a Fregean sense.

2.2   Indexical Reference

A straightforward, albeit not very popular way to adjust the above notions for indexicals is to switch from linguistic types to a token-based approach. Instead of regarding terms as linguistic objects in general, i.e. as linguistic types, concrete tokens of their utterances are taken as a basis for the

respective reference relation. Strictly speaking, both direct and indirect token-based accounts of indexical reference are possible. For example the referent of an 'I'-token could be directly associated with its user, which without doubt would be a direct reference approach. It is, however, more common and also more satisfying to explicitly take into account *reference rules* of indexicals. For example, the English first-person pronoun 'I' has a reference rule such as *the person who has uttered the respective token of 'I'*. Another example is the Tolai demonstrative 'abara', which roughly has the reference rule *the place the speaker is pointing at, which is down there near the addressee or a place known by the addressee*.[3] Since these rules depend on the user of a token, the position of the token use, and the time of token use for communication, they are *egocentric*, i.e. they depend on the deictic center *I-Here-Now* (Bühler, 1934), and they are *token-reflexive*, i.e. they explicitly take into account the linguistic token as an object.[4] To instantiate a reference rule, the respective token is named, and thus the egocentricity of the expression is eliminated. For example, a proper instantiation of the rule for 'I' yields (3) for (2).

(2)   Bob: I am hungry.

(3)   The person who has uttered (2) is hungry.

The person who has uttered (2) is identical in each and every respect to Bob. An instantiated rule may still be considered context-dependent, because it expresses a dependence on the token user in the utterance situation, yet the term '(2)' is an ordinary proper name, and so egocentricity is eliminated when a reference rule is instantiated. The resulting form of context dependence is the same as that of any other use of a definite description that contains a proper name. The token-based approach can be traced back to Reichenbach (1947) and Burks (1949) and has been defended by Perry in various publications.[5] Broadly conceived token-based accounts don't require changing the notions of reference introduced in the previous section. Talk about linguistic types is replaced by talk about linguistic tokens by introducing names for tokens when the reference rule is instantiated.

Token-reflexive accounts have never gained much popularity for various reasons. First, a truly token-reflexive logic is not easy to implement without running into well-known paradoxes. Second, it is hard to find reference rules that work in any media and in case a token is re-used several times.[6] Third, two-dimensional modal logics like that of Kaplan (1989) have turned out to be an elegant alternative and are well-known since the early 70ies. In Kaplan's Logic of Demonstratives (LD), contexts are reified and parametrized and formulas are evaluated with respect to two param-

eters, one for the context and one for the modal index, in two steps. The linguistic meaning (character) of an expression with respect to some context parameter yields an intension (content) that with respect to some circumstances of evaluation yields an extension. For example, the linguistic meaning of 'I' is represented as a function that takes a context k and yields a function (the content of 'I' in k) that takes some circumstances of evaluation i and yields the extension of 'I', which in this case is the speaker of k. The two-layered structure of semantic evaluation allows for a number of useful distinctions. If an expression yields the same extension for every index at which an extension is defined, then it is rigid; otherwise it is non-rigid. If an expression has the same content in every context, then it is not indexical; otherwise it is indexical. Since LD is based on linguistic types, the above notions of reference need at least an additional argument place for the context of utterance. Semantic reference in this view takes at least terms qua type, objects, and contexts into account, whereas a speaker in this view (speaker-)refers to one or more objects by means of a given term qua type in a given context of utterance. The distinction between type- and token-based accounts of indexicality is largely irrelevant for the following discussion, because it doesn't affect the main difference between speaker reference and semantic reference: the former is (at least) a triadic relation between expressions (be these lingistic types or tokens), agents, and ref-

erents, whereas the latter does not explicitly involve agents except when they are needed as part of a context to saturate an indexical within a two-dimensional framework. Thus, the issue of how to model indexical context dependence is orthogonal to the abovemade distinctions between speaker, semantic, and identifying reference.

3   Re-Assessing the Controversy

I will now present two arguments for description theory. These are not 'knockdown' arguments. They are rather intended to show that for the purpose of modeling conditions for successful identifying reference the indirect reference view is better suited than direct reference. The first argument is directed against the idea that Millian specifications of semantic content, i.e. representations of semantic content that imply Millianism, are semantically primordial or should for any reasons other than mere practicality or representational economy play a privileged role in semantics. The second argument is based on the (perhaps) trivial thesis that when someone attempts to identify an object, he has to ressort in one way or another to some of the properties he believes or assumes that object to have.

3.1 Against the Primordiality of Millian Content

Let me start by observing that apart from questions concerning rigidity it is not so obvious to what exactly the distinction between direct and indirect reference amounts.[7] In case of indexicals the direct reference view is particularly befuddling, since indexicals unoubtedly express various descriptive conditions. Let's take a look at an example. The character of 'now' is a function that for any context of its utterance k yields a function that for arbitrary modal index i yields the time of k, i.e. the time at which the utterance has taken place. This is the type-based analogue to the token-based reference rule that roughly says that a token of 'now' semantically refers to the time of its own utterance.[1] Consider a particular utterance u. The instantiated reference rule then says that the semantic referent of the token ⌜now⌝ in u is the time of u. It is part of what Perry (1997) calls *Content-M*: token-reflexive truth-conditional content that is often cognitively relevant to individual speakers interpreting an indexical. Now the type-based approach in a two-dimensional semantics says something very similar, namely that the semantic referent of 'now' in context k (of u, a clause omitted in

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[1]This is the traditional stance, which has recently come under criticism from various angles. See for example Bach (2005) and Mount (2008). A more adequate rule for 'now' would state that it denotes a time interval of which the time of utterance must be a subinterval [. . .].

the type-based account) is the time of k.[8] The token-reflexive meaning of 'now', which may either be circumscribed as a reference rule or modeled by a function from contexts to content-intensions, determines the semantic referent of the indexical, and so it looks as if indexical reference were a clear case of indirect reference. Kaplan rejects this view, though.[9] What is then the difference between direct and indirect reference in case of indexicals?

As Kaplan (1989) suggests, although the reference rule expresses descriptive conditions on the referent, the semantic referent is not *determined* by these conditions, but rather given within the context. The semantic referent is given within a context *in accordance with* the reference rule, not *by* the reference rule. Perry (1997) ressorts to the distinction between referring and describing in order to explain this subtlety: "...'I' refers whereas 'the person who utters this token' describes." (Perry, 1997, 597) While the token-reflexive Content-M is often needed to account for the cognitive significance of a term, there is, according to Perry, another representation of the semantic content of utterances he calls *Content-C*. In the present terminology, this is Millian content, which might for example be specified as a Russellian proposition. According to Perry (1997, 2001b), Millian content represents the 'official' semantic content, and he gives two arguments to justify this claim. His arguments deserve being examined in closer detail,

since they are independent of Kripke's rigidity thesis and thus also apply under the assumption that description theory has no principal problem with dealing with rigid terms. I will use the following examples for discussing these arguments:

(4)   Bob to Alice: You are hungry.

(5)   Alice: I am hungry.

(6)   Carol: Alice is hungry.

(7)   David: The girl with the Grateful Dead T-shirt is hungry.

Perry's first argument, call it the *Counterfactual Circumstances Argument* (CCA), is based on the observation that there is a "...difference between the conditions under which an utterance is true, and conditions under which *what is said by the utterance* (or perhaps better, *what the speaker says*, in virtue of making the utterance) is true." Perry (1997, 603) For example, there are clearly counterfactual circumstances under which 'I' in (5) would not semantically refer to Alice, but someone else, namely those in which someone else utters (5) taken as a linguistic type. Still, what Alice says by the token (5) in the given context is true in all counterfactual circumstances in which Alice is hungry. Intuitively, what the utterance says doesn't seem to depend on the way in which the semantic referents are

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determined or picked out and is invariable with respect to counterfactual scenarios. Presuming that the constants used are rigid, a Russellian proposition like $\langle a, P \rangle$ is well-suited for representing this form of meaning.

His second argument, the *Samesaying Argument* (SA), goes as follows. Different utterances such as (4)–(6) intuitively say the same. They are about Bob and assert that he is hungry. So intuitively these utterances express the same content. This fact can be expressed neatly by choosing a Millian representation like $\langle a, P \rangle$ as the content of these utterances.

Albeit being intuitively compelling at first glance, I believe these arguments to be ultimately inconclusive. First of all, concerning the CCA it must be noted that nonrigid and highly descriptive expressions such as definite descriptions can likewise be taken to express rigid content. For example, following Donnellan (1966) and Kaplan (1990), it has often been claimed that there is a referential reading of sentences like (7) according to which (7) is true in all circumstances in which Alice is hungry.[2] Perry is, of course, aware of referential readings and considers a third notion of content (Content-D) as official content, in which the referents of definite descriptions are represented in a Millian fashion, too. However, using Content-D as official content would presume that the referential reading of definite descriptions is the 'official' one, but the converse seems to be the

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[2]See Amaral (2008) for a recent defense of referential readings.

case.[10] While I fully agree with these observations, the existence of referential readings of clearly descriptive expressions means that CCA cannot be taken as supporting, indirectly, the direct reference view, since reference by definite descriptions is almost by definition indirect. Perhaps CCA should not be understood this way and Perry doesn't seem to understand it this way either; the argument is clearly intended as an argument for Millian *content* and not for direct reference. However, to this it can be replied that "...the argument does not show that indexicals and demonstratives are directly referential but, at most, that they are rigid." (Bach, 2007, 397-8)

There is another argument against CCA, which involves denying that the intuitions that serve as a premise for CCA are as clearcut as Perry puts them. There *is* a sense in which what Bob says in virtue of uttering (4) is that whatever person he addresses in the given utterance situation is hungry, which might be someone else than Alice in another context of utterance. The referent of 'I' just happens to be Alice in the context of (4), but perhaps not in a substantially different way than the way in which the definite description in (7) happens to denote Alice in the context of (7). *Given that* the respective referent is Alice in both cases, we can consider the claim that Alice is hungry independently of any other contexts of utterance and independently of counterfactual circumstances, and Millian content with rigid constants is suitable for encoding this independence from counterfac-

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tual circumstances, but why should such a representation be the 'official' content? Both the definite description and the indexical express conditions on the context and in order to understand their uses additional assumptions about the world have to be made.

A similar reply can be given to the Samesaying Argument. On certain occasions the SA may overgenerate Millian content if it is used as a criterion. For example, if it is obvious to all discourse participants that Alice is the only one wearing a Grateful Dead T-shirt in the given utterance situation, then (7) can be said to express exactly the same semantic content as (4)–(6), the Russellian proposition $\langle a, P \rangle$. Second, all of (4)–(6) express underlying descriptive conditions that have to be fulfilled prior to being able to establish corresponding Millian content. Let k4...k7 be the contexts of utterance of (4)–(7) and let's assume that all utterances are made in the same overall utterance situation.[11] If so, the following conditions must hold, before it can be rightfully claimed that any of (4)–(7) say the same:

(8) The addressee of k4 is Alice.

(9) The speaker of k5 is Alice.

(10) Alice is named 'Alice'.

(11) The girl wearing a Grateful Dead T-shirt in k7 is Alice.

These conditions are descriptive in the sense of describing the semantic referent.[12] Perry is certainly aware of this and the whole purpose of Content-C is to be independent of such conditions. But there are situations in which conditions like (8)–(11) are not trivially fulfilled, and in these situations our samesaying intuitions collapse correspondingly. For example, it might not be clear who is addressed by (4), there may be general doubt about who the speaker of (5) is when the utterance is made during a phone conference with more than two discourse participants, the proper name 'Alice' is equivocal and the discourse participants might know about it, and the girl with the Grateful Dead T-shirt might be someone else. In yet other situations, people might have a clear intuition that two utterances say the same while in fact they don't. Listeners can be mistaken about who is addressed, they might mistake the speaker for someone else without recognizing it, the discourse participants might not recognize that the name 'Alice' is equivocal, and, of course, people might disagree about the referent of a definite description without realizing that they disagree. Only in case of automatic indexicals like in (9) and in case of proper names as in (10) does it seem to make sense to stipulate some official Millian content, but even then this cannot be done on the basis of samesaying intuitions when the respective underlying conditions are not fulfilled. To summarize, samesaying intuitions alone don't justify sameness of semantic content. Moreover,

it can be seen from the examples that the kind of content encoded by the Russellian proposition $\langle a, P \rangle$ is pragmatic and not semantic according to the traditional use of this distinction. The judgement that any of the utterances (4)–(7) says the same as another one depends on the beliefs of the discourse participants that (8)–(11) hold respectively, and both these beliefs and the conditions themselves are context-dependent. Given all this, it is doubtful whether the Samesaying Argument fulfills the argumentative goal Perry devised it for; it is hard to see how it could be used to back up Millian content (Content-C) as the official content of what is said. Semantic content doesn't depend on speakers' sometimes erroneous beliefs, and at a close look all the terms in (4)–(7) express descriptive conditions.

To make one thing clear, this is far from being meant as a general critique on Perry's reflexive-referential theory, but only on his attempts to establish Millian content as the 'official' one. In contrast to many other authors who silently assume that the semantic content of proper names, indexicals, and demonstratives is Millian, Perry makes it clear that he considers it a mistake to focus on one kind of semantic content only, and one of his main goals is to show that token-reflexive Content-M is needed for indexicals. Perry also points out that "...the concept of 'truth-conditions of an utterance' is a *relative concept*, although it is often treated as if it were absolute." (Perry, 1997, 599) I fully agree with this statement and my

point of disagreement with his position only concerns the primordiality of Millian content. There is no such primordiality and descriptive content is as public and official as Millian content. We may take one kind of semantic content of a term to be Millian and another kind of semantic content of that term to be descriptive, and an answer to the question which of them suits better not only depends on the sort of the term under consideration but also on the particular purpose of modeling semantic content. If conditions like (8)–(11) can be ignored for some reason, for example because they are implemented in the models of a natural language processing system in such a way that they can be trivially known to be fulfilled, then there is no need to be concerned about access to particulars and the criteria used by speakers to determine semantic referents. In this case direct reference and Millian content may be an adequate choice. If on the other hand we want to describe the behavior of speakers that in concrete situations mistake the semantic referent of a term for another one on the basis of linguistic features of that term such as reference rules, then a way to model speaker reference is needed that reflects a speaker's ability to recognize objects by means of certain properties they are supposed to have. As I will lay out in the next section, indirect reference is in some sense (to be laid out more precisely below) indispensable for modeling identifying reference.

3.2   The Role of Identification

So far I have only argued against the widespread view that Millian content is preferable to descriptive content independently of the fact that presumedly directly-referential terms are rigid. I will now proceed to the second argument according to which a description theory of reference, and hence some form of descriptive content at some level of semantic representation, is needed regardless of whether the terms involved are rigid or not. This argument has two parts. Firstly, I will argue that both semantic reference and speaker reference are needed for formulating success conditions for identifying reference, and secondly, I will show why the indirect reference is principally better suited for modeling speaker reference than the direct reference view.

3.3   Identifying Reference Involves a Comparison

As stated in the beginning of this article, identifying reference is a discourse participant's attempt to determine the semantic referent of that term in a given context. If this is so, then there should also exist a condition that allows one to determine whenever such an attempt was successful. Suppose that there were no such condition. Then it would be impossible to determine whether someone's attempt to identify the referent was successful or

not, and this would be absurd. So there is such a condition, and I submit that it is not hard to express this condition in the current terminology. Identifying reference is successful if the object that a given term *actually* refers to is the same as the object that the speaker believes or assumes it refers to and not successful otherwise.[13] While it follows from the relational nature of the notions involved, the fact that objects are compared with objects in the formulation of the condition is not very important. The idea behind the condition is that something in actuality has to be compared to something constituted by an agent's beliefs or assumptions, to a sort of representation (or better: presentation) of the actual object, and within a modal logical framework it is then natural to assume that the first kind of objects are the actual ones and the second ones are doxastic possibilia, i.e. objects that only exist insofar somebody has beliefs or makes assumptions about them. Assuming standard possible world semantics with possibilia, the desired condition then boils down to a cross-world sameness condition between actual and doxastic objects.

Neither the semantic referent, i.e. the object to which a given use of a term actually refers to in a given context, nor the speaker referent, i.e. the doxastic possibilium representing what an epistemic agent believes or assumes to be the referent of a term, suffice for themselves to formulate such a condition. Obviously both of them are needed in order to be able to

compare them to each other. I believe that these considerations suffice to establish the first claim that both a speaker referent and the semantic referent are needed in order to adequately describe identifying reference. There seems to be no way around taking identification as an act of comparing entities on the basis of some notion of equality or similarity.

3.4 Identification Presumes Distinguishing Criteria

Equality or similarity of objects is determined on the basis of some of their properties, but this does not imply that an agent has to take into account any of these properties when he attempts to identify an object as the referent of a certain term. Something more has to be said about identification. I take it as part of the meaning of *to identify* that things are not identified simpliciter, but something is always identified as something.[14] In case of speaker reference, a discourse participant attempts to identify an object *as* the referent of some term. This process involves singling out a (doxastic) object from any other relevant (doxastic) objects in the given communication situation with the goal of recognizing it as the referent of the term in question. How does this work?—The answer to this question is mostly an empirical matter, but from a philosophical perspective it seems striking that distinguishing something from something else (with some higher-level

goal in mind) requires taking into account some properties that the distinguished object has and that the other relevant objects don't have. The respective distinguishing properties are neither needed for adequately describing the cognitive process of identifying something as something, nor are they needed for describing corresponding singular thoughts, nor does an agent needs to be aware of them when he identifies an object. They are rather essential and objective ingredients of any genuine process of identification. Let me give an example. In order to identify an apple within my perceptual field as an apple, my 'mental presentation' (doxastic object, in the context of logical modeling on the basis of normal modal logic with corresponding rationality assumptions) of this apple lying on the desk in front of me must have some properties by means of which its is distinguished from all other relevant objects in the given situation and by means of which it is an adequate presentation of an apple, i.e. it must be sufficiently equal or similar to the actual apple. Suppose there were no such properties. Then there would be no grounds for asserting that I have identified something at all, let alone this apple in front of me. So attempting to identify an object invariably involves ressorting to properties that it is supposed to have. A direct reference theorist that still disagrees at this point might have a different notion of identification in mind. In this case, there does not seem to be much left to argue about, but then at least the obscure

directness metaphor of the notion 'direct reference' has then been replaced by the more fruitful question about what it means to identify something simpliciter if that is possible at all.

It is important to point out at this time that this trail of thought is distinct from the related question central to Evans (1982) as to how adequately represent singular thoughts. It is possible to remain neutral about the question whether an agent must always have 'discriminating knowledge', the thesis discussed by Evans under the label 'Russell's Principle', in order to successfully identify an object or whether there are modes of reference that do not require such knowledge, while at the meantime upholding the thesis that whenever an agent a identifies an object b (as a P), there need to be properties that discriminate b from any other objects relevant to a in the given situation. The latter thesis suffices to show that speaker reference can always be modeled on the basis of certain properties that distinguish a doxastic object from any other doxastic object. Being doxastic possibilia the objects in question exist only relative to an agent's system of belief and assumptions in a given interpretation situation, but the agent does not need to be able to give justice to all of the properties or the identification criteria at play when he attempts to identify the referent of a term. Consequently, an agent does not need to have discriminating knowledge when he successfully identifies an object as the referent of a term, although

he has certain true beliefs or makes certain correct assumptions about the respective object. This position gives rise to the *non-formulable description view* of reference. There is a definite description that encodes the properties by means of which the speaker referent is singled out in an agent's cognition from other relevant objects, but the agent does not need to be able to verbalize them. While there is no general requirement for a speaker to do so, in a given situation someone might attempt to identify the bearer of a name. For example, Bob might attempt to identify the referent of 'Alice' in a given situation. Usually people do this by facial recognition and I submit that any such process must involve properties of Alice that distinguish Alice from other relevant objects in the situation when the identification is successful, and, in case of a failed attempt, at least properties of what the agent considers to be Alice that set his presentation of Alice appart from any other objects he considers relevant in the given situation. However, Bob does not need to be able to verbalize his identification criteria or formulate a description corresponding to them, and I do also not assume that anyone else has to be able to do so.

4 Description Theory and Relativized Rigidity

As argued above, identification criteria are always at play when an agent attempts to identify the referent of an expression, but I have not yet given any detailed motivation as to why the description view fares better for modeling identifying reference than similar means such as nonrigid constants or using a diagonalization operator in a two-dimensional language. As I will lay out below, there are two main problems with using nonrigid constants or diagonalization for the purpose of modeling speaker reference. First, nonrigid constants do not make subjective identification criteria explicit and are therefore not fully explanatory adequate. Second, implementing nonrigid constants or using a diagonalization operator to make a rigid term nonrigid is not descriptively adequate for expressing speaker reference of terms that occur in the scope of nested modalities.

4.1 Motivation for Description Theory

From a formal point of view, identifying reference and cross-world sameness are closely related to each other, as long as the corresponding attitude is modeled by modal epistemic logic with possible world semantics. Let me presume for current purposes a standard two-dimensional framework like LD, in which the ordinary modal operators are based on normal modal logic

with KD45 modality for belief and S5 modality for metaphysical modality. Since this article is intended as an informal contribution, I will give paraphrases. Suppose a is the semantic referent of the token ⌜Alice⌝ and a' is the speaker referent of ⌜Alice⌝ for Carol in the context k6 of utterance (6). Identifying reference can then tentatively be expressed in terms of cross-world sameness as follows.

(12) There is an $x = a$ in k6 identical to Alice, such that in all worlds compatible with what Carol believes in k6, x is the same as the object a' Carol believes to be Alice in k6.

In order for this condition to make sense, constants have to be non-rigid.[15] Thus, a' depends on Carol's belief, whereas a depends on the actual world, on the way things are.[16] The condition quantifies into the belief context and says that a certain object believed to exist by Carol is the same as an object that actually exists (or persists in the actual world, if a mere possibilist position is assumed). This is a paradigmatic case of what is often called cross-world identity, but as it is well-known that strict Leibnizian identity is not at play in cases like the above one, the term *sameness relation* is more adequate in this context. Conditions like (12) elicit two interesting problems. First, (12) is based on public sameness conditions that arise from our understanding of belief. In which sense are a and a' the same object,

given that they have different properties? This problem has been discussed extensively since Lewis suggested counterpart theory Lewis (1968, 1986), and it would be impossible to even scratch the surface of the discussion about cross-world sameness. For the current purposes, it suffices to assume that the sameness relation in question cannot be strict identity. Second, as laid out above, there *are* certain identification criteria independently of whether the agent in question is consciously aware of them or not, and the indirect reference view can be regarded as a means to make them explicit. But which criteria do competent speakers assume and in what way can they be modeled? This is the problem I'm interested in.

Consider (12) again. If what has been said earlier is correct, this condition is incomplete in many respects. First, since Carol uses the proper name 'Alice' to report that Alice is hungry, she must, as a competent speaker, minimally believe that the referent of that name is hungry, i.e. the object bearing the name 'Alice.'[3] Moreover, Carol might consciously or unconsciously take into account all kinds of probabilistic information supplied by

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[3]As Bach (2002) has laid out, the property of being named in a certain way does not violate Kripke's Circularity Prohibition. A use of the property of being called 'α' does not imply that the referent of 'α' exists or persists, does not imply that 'α' is a genuine proper name with some causal chain leading back to an initial act of baptism, and the respective name is mentioned, not used, in the formulation of the property.

the terms involved, i.e. suplied by virtue of linguistic meaning, in order to determine the semantic referent. For example, in many conversational contexts she might infer (not conclude) from the use of the name 'Alice' that Alice is female. In other words, she might conclude (not just infer) from the use of that name in the context of the conversation that Alice is likely female. Second, especially in the case of proper names, but also in case of uses of nonautomatic indexicals like *we* and context-dependent uses of definite descriptions, the criteria provided by virtue of the linguistic meaning of the expressions involved (conventionalized meaning, though not always meaning relevant for the truth-conditions) in many cases don't suffice to distinguish the speaker referent from other relevant objects. So subjective identification criteria may need to be added to the condition that Carol activates when attempting to identify Alice. Formulated using the description view, the resulting condition between the semantic referent of 'Alice' and Carol's speaker referent in (6) reads as follows.

(13) There is an x in k6 identical to Alice, such that in all worlds compatible with what Carol believes in k6, x is the same as the unique object believed by Carol to be named 'Alice' and to satisfy certain criteria I_c in k6.[17]

Finally, condition (10) may be added, resulting in the following condition as a whole:

(14) Alice is named 'Alice'and there is an x in k6 identical to Alice, such that in all worlds compatible with what Carol believes in k6, x is the same as the unique object believed by Carol to be named 'Alice' and to satisfy criteria I_c in k6.

To give another example, a condition for Bob's speaker reference by means of ⌜you⌝ in (4) can be paraphrased as follows:

(15) Alice is the addressee of k4 and there is an x in k4 identical to Alice, such that in all worlds compatible with what Bob believes in k4, x is the same as the unique object in k4 believed by Bob to be the addressee of k4.

There is no need to stipulate subjective identification criteria in this case, although they might play a role. Being the only addressee of an utterance suffices to successfully determine a unique object in the context of that utterance, if there is exactly one addressee. Notice also that the conditions for successful identifying reference do not always directly correspond to some reading of the use of a term. While Carol's Alice a' might be the referent of 'Alice' in a de dicto reading of a belief ascription to Carol, there

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is no corresponding referentially opaque reading of 'you', since 'you' (in the singular numerus) always refers to the addressee of the utterance and not to what someone believes to be the addressee of it.

The above examples illustrate the following points. First of all, it seems neither necessary nor desirable to model semantic reference on the basis of description theory. Adding (10) to (13) doesn't seem mandatory, because the semantic referent is determined outside the scope of Carol's belief in (13) and (14). It is an object that doesn't actually have to be determined by the members of a linguistic community on the basis of some shared or even conventionalized meaning. By what means the actual semantic referent of a proper name is 'given' to someone does not matter when it occurs outside the scope of the respective doxastic modality in conditions like (14). This object is used to correct individual speaker references gone astray and is therefore 'trans-subjective' by its very nature. (I used to call it transcendent, which sounds even worse. Someone who has truly committed himself to the direct reference view might want to say that there are no means to access this particular and we are just considering a bare object independently of language. If so, some notion of direct acquaintance must be assumed and my reply to such an attempt is that by ignoring the problem of language immanence you cannot make it go away.) So at least from a relatively narrow semantic perspective, no such means need to be

specified. Things look different for indexicals and demonstratives, though. As they express feature-rich reference rules and together with descriptions have some undisputed linguistic meaning, semantic reference of indexicals and demonstratives is always indirect in the sense of expressing descriptive conditions about the utterance situation. So direct reference seems to be more suitable for proper names than indexicals and indirect reference more suitable for indexicals than proper names, but in general both views can be used for modeling semantic reference—proviso the assumption mentioned at the beginning that the indirect reference view can adequately deal with rigidity.

The converse is the case as far as speaker reference is concerned. Identifying the semantic referent of a proper name in an utterance like (6) requires a speaker to successfully identify the referent of that name as the bearer of that name. Carol cannot be said to successfully identify the referent of 'Alice' in (6) if for example she reckognizes Alice visually, but at the meantime doesn't believe or at least assume for the purpose of understanding the utterance that Alice is called 'Alice.' This is, as one might say, the linguistic as opposed to epistemic aspect of speaker reference, which provides the basis of what Bach (2002) calls *nominal description theory*. While nonrigid constants as in (12) can be used, they don't encode any identification criteria—criteria that are partly given by linguistic meaning

of the terms involved. Nonrigid constants can thus be considered descriptively adequate but aren't fully explanatory adequate for modeling speaker reference.

4.2   Relativized Rigidity

Now that description theory has been motivated as far as limitations of space have allowed, it is time to address a peculiar adequacy requirement for any kind of theory in which speaker reference is modeled. As is well-known, descriptions used for modeling semantic reference need to be rigidified and various technical means have been suggested for that purpose, for example using an actuality operator, using Kaplan's $dthat$ operator in a two-dimensional framework, or wide scope theory. However, it has largely gone unnoticed that when any of these means are used for implementing speaker reference (as opposed to semantic reference), they have to be *non-rigid with respect to the first doxastic modality within nested modalities and rigid otherwise*. This doctrine, which may be called *relativized rigidity*, is illustrated by the following utterance.

(16)   Alice believes that it is possible that Bob believes that Carol loves David.

De dicto readings of attitudes are natural language symptoms of speaker references that have gone astray. Based on Alice's speaker references, the de dicto reading of the above utterance can be paraphrased as follows:

(17) In all worlds w compatible with Alice's beliefs in context k16: there is a box-accessible possible world w' such that: in all worlds w'' compatible with what the person uniquely (called 'Bob' in w and satisfying Alice's criteria I_1 in w w.r.t k16) believes it is the case that: the person x uniquely (called 'Carol' and satisfying Alice's criteria I_2 in w w.r.t k16) and the person y uniquely (called 'David' and satisfying Alice's criteria I_3 in w w.r.t k16) are such that x loves y in w''.[18]

'Bob' and 'Carol' are evaluated with respect to Alice's belief and her subjective identification criteria and not with respect to subsequent modalities. The embedded proper names are nonrigid with respect to the first belief operator, but rigid otherwise.

Contrast this analysis with other suggestions to get some 'subjective reference.' such as using nonrigid constants or applying a diagonalization operator, i.e. the converse of $dthat$, to an otherwise rigid term.[19] Nonrigid constants have already been discussed before, and I have rejected them as being only partially, descriptively adequate since they do not make iden-

tification criteria explicit. (If in turn somebody does *not* want to make identification criteria explicit, then I cannot see why anybody would not want to use them, except that perhaps some less liberal logicians find the whole idea of a nonrigid constant counter-intuitive.) In any case, what I will say about diagonalization also applies to nonrigid constants, so let me skip nonrigid constants and take a look at diagonalization. A diagonalization operator makes a term nonrigid with respect to the last modality introduced, whereas according to the relativized rigidity view a term has to be interpreted as nonrigid expression with respect to the first de dicto modality, but rigid otherwise. So if the relativized rigidity view is correct, diagonalization cannot be used to adequately express speaker references in de dicto readings of attitude ascriptions. According to my 'intuitions' the relativized rigidity view is evidently correct. There is no way in which the names 'David' and 'Carol' in (16) could depend on Alice's beliefs about the possibility of Bob's beliefs or on her beliefs about Bob's beliefs or on anything else than her beliefs simpliciter. It is an adequacy criterion for any useful notion of de dicto readings that terms in iterated modalities only semantically depend on the first de dicto modality.

If the relativized rigidity maxim provides indeed the corect interpretation of de dicto readings of utterances like (16), then definite descriptions can be used to express these readings, as the above paraphrase illustrates.

While there are certainly many other ways to express these kinds of readings, the ease and simplicity with which descriptions can be used to express such maxims, which must be understood as regulations of the mapping from natural language to formal representation language, provides some additional motivation for description theory.[20]

5 Conclusion

From an epistemic point of view, success conditions for identifying reference like (14) and (15) are indispensable. If they are ignored, speaker references gone astray cannot be explained adequately. Similar conditions can be formulated on a direct reference basis, but thereby important aspects of identification are lost, as for example the role that subjective identification criteria play in speaker reference. To say that terms like proper names and indexicals are unconditionally rigid is only adequate from a strictly semantic point of view, but not from the epistemic perspective assumed when a speaker's attempts to identify referents are considered. Description theory is adequate for modeling speaker reference whenever subjective identification criteria are of interest and allows for expressing the scope distinctions needed for obtaining an adequate reading of de dicto interpretations of terms ocurring within the priority scope of iterated modalities.

Notes

[1]"'Mentioning', or 'referring', is not something an expression does; it is something that someone can use an expression to do." (Strawson, 1997, 342) Strawson (1997) (in reply to Russell) and Donnellan (1966) primarily consider reference by means of definite descriptions. Here the term is used in a neutral way for the use of any referential expression such as proper names, indexicals, or definite descriptions by a speaker.

[2]Kripke and many others define rigidity based on possible worlds. A term is rigid if it denotes the same object in all possible worlds in which besaid object exists. See Kripke (1981, 48); there are, of course, more distinctions like the one between obstinately and persistently rigid designators (Stanley, 2001, 556-7), but these details do not matter here. Kripke's definition follows from the one I have given when modal operators are implemented with their usual possible worlds semantics in Kripke models.

[3]This data is taken from Mosel (1982, p. 127).

[4]The term 'egocentricity' is sometimes understood in a narrower sense for the perspectivity of (essential) indexicals and corresponding representations of de se thoughts using Lewis' property ascription theory or centered worlds, see e.g. (Recanati, 2007). As in [. . .], egocentricity in the present context only means that some semantic ingredients must be provided *in dependence of the deictic center* of

the utterance situation.

[5]See for example Perry (1997, 2005).

[6]A particular problem is the re-use of tokens in certain medias Predelli (1998, 2005, 2006), cf. Perry's reply in (Perry, 2003).

[7]Haas-Spohn (1997, 27: fn. 13) makes a similar remark.

[8]In the view of Kaplan (1989) it is an important desideratum of a logic of indexicals to be able to consider a sentence in a context in which it is not uttered, cf. Predelli (2006), while Perry (2007, 509-11) is more liberal concerning this requirement.

[9]See (Kaplan, 1989, pp. 493–497).

[10]See Perry (1997, 604), Perry (2001a, 86-7).

[11]There is no way to express directly in LD that some utterances are made in the same overall utterance situation, because LD doesn't have any special event mereology, but this might for example be expressed in Situation Theory or Event Semantics.

[12]People who doubt that (10) expresses a non-trivial condition may for example replace 'Alice is named' by the phrase 'Sujet No. 262726 s'appelle.'

[13]It is under certain deviate circumstances possible that a discourse participant assumes that a term refers to a certain (doxastic) object without believing so. For example, if Alice knows that professor Dumble always confuses her with Carol,

she might prefer to silently assume that 'Carol' refers to her for a while instead of interupting him.

[14]This is the reason why talking about 'self-reference' in thinking in the context of the discussion of essential indexicals is in my opinion misleading (see my [. . .] and [. . .]). As laid out by Millikan (1990), someone having an *I*-thought does not need to identify himself as the person currently thinking, since he is the person currently thinking. There is no need to check, form beliefs, or make assumptions about who is the 'referent' of that thought. *I*-thoughts are not indexical.

[15]I urge the reader to temporarily switch off any dogmatic commitments to direct reference *and* Kripke's rididity thesis for proper names, should there be some. Bear in mind that we are modeling speaker reference and identifying reference, not semantic reference. Nonrigid constants are also used by Fitting and Mendelsohn (1998) and in Hintikka and Sandu (1995) for similar purposes.

[16]Disclaimer: For simplicity, no separate modalities are used for beliefs and assumptions, but in a more elaborate account the modeling of belief could (and probably should) be kept apart from the modeling of identifying reference by using two distinct accessibility relations. Speakers sometimes interpret utterances on mere assumptions and not on the basis of their actual beliefs—a point already made by Stalnaker Stalnaker (1978). This is the reason why I talk about beliefs and assumptions throughout this article.

[17]In the paraphrase the belief attribution is repeated to indicate the correct

scope, but in fact only one belief is used. I don't want to go into the technical details in what follows, since I have done this elsewhere [...]. But for clarificatory purposes it seems advisable to once give the translation of a paraphrase into some logical language. Assuming first-order modal logic with a fairly standard syntax and actualist quantification, the above condition will be: $\exists x (x = a)\, \mathcal{B}_c\, [x \approx \iota y(A(y) \wedge I_c(y))]$, where $A(x)$ stands for the property of being called 'Alice', ι is the iota operator, I_c represents Carol's subjective identification criteria, '$\approx$' stands for cross-world sameness, '$=$' strict identity, and $\mathcal{B}_a \phi$ for KD45 belief taking an agent a and a formula ϕ (defined only for finitely many agents). Other paraphrases given below can be translated into this language in a straightforward manner.

[18] How much formal details are given is always a tradeoff between personal preference, the intended audience, and sometimes also editorial policies. For clarificatory purposes, here is the corresponding expression in a two-dimensional modal logic with possibilist quantifiers inerpreted with respect to model M, context k and index-world w : $M, k, w \vDash \mathcal{B}_a \imath x[Bx \wedge I_1 x]\imath y[Cy \wedge I_2 y]\imath z[Dz \wedge I_3 z]\mathcal{B}_x \Diamond L(y, z)$, where $\imath x[\phi]\psi$ is true iff. $\exists x(\phi \wedge \forall y(\psi\{x/y\} \rightarrow x = y) \wedge \psi)$, $\phi\{x/y\}$ being the formula obtained from ϕ by replacing all free occurrences of x in ϕ by y. (A two-dimensional logic is assumed to do justice to the references to context in the above paraphrase, but of course the formula would look exactly the same in an ordinary single-index logic.)

[19] These accounts depart from Stalnaker (1978) by taking diagonals of expres-

sions for modelling their cognitive significance (viz. speaker reference from the present point of view). See Haas-Spohn (1994, 1997), cf. Van Rooji (2006) for a recent overview.

[20]For technical details, I refer the reader to [. . .], where it is shown in detail how to implement relativized rigidity compositionally on the basis of the indirect reference view outlined here, including subjective identification criteria provided in dependence of the first de dicto attitude holder.

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