

INDEXICAL REFERENCE AND *DE RE* BELIEF

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In a number of papers¹, Castañeda has argued that there is an important distinction between genuine self-belief and belief about something which is in fact oneself. The distinction emerges in our attributions of belief: 'Jake believes that he (himself) is healthy' cannot be analyzed as 'Jake believes that *x* is healthy', where '*x*' is replaced by any name, description or demonstrative pronoun referring to Jake. The reason for the unanalyzability is that genuine self-belief, as opposed to belief about something which happens to be oneself, requires that the believer be able to make first-person reference to himself. A person who did not refer to himself in the first-person way (normally, in English, by use of the pronoun 'I'), could be said to believe of someone, who in fact is himself, that that person is healthy; but such a person could not be said to believe that he (himself) is healthy.

We propose to show how these results of Castañeda's can be incorporated into the formal semantics which Tyler Burge² has begun to develop for demonstrative constructions. Since, as we shall argue, attributions of genuine self-belief are best construed as attributions of *de re* belief, it is useful first to integrate Burge's views on *de re* belief with his work on demonstrative constructions.

I

Demonstrative constructions are used to pick out an object extralinguistically without specifying it in the immediate discourse. Formally, this comes to representing the demonstrative construction as an indexed free variable and the entire assertion as an *open sentence*. Clearly, the satisfaction conditions for closed sentences cannot take into account the peculiar contextual uniqueness of demonstrative constructions. On the other hand, open sentences do account for these contextual characteristics. If someone uses a demonstrative construction to refer to an object, it is as if that person picks

up the object and makes it part of the demonstration itself. This allows that, in the immediate context, objects can be referred to without being characterized or named. To accommodate demonstrative constructions, the truth predicate needs only to be relativized to allow for the truth of open sentences on occasions of their use.

What are true or false for Burge are, in the first instance, assertions actually made by someone. These assertions, in turn, contain individual acts of reference to objects, acts of an intentional sort carried out via assertions made by a speaker in a certain place and at a certain time. Burge takes all these to be conditions of normal assertability. An assertion by means of a demonstrative construction is true or false if and only if there is an act of reference by someone, p , to something, y , where possibly $p = y$, i.e.,

$$(R) \quad \exists x(\text{Reference}(x) \ \& \ \text{By}(x, p) \ \& \ \text{To}(x, y) \ \& \ \text{At}(x, t) \ \& \ \text{With}(x, z_n, s)),$$

where x range over acts of reference, p over persons, t over times, s over sentences, and where 'To(x, y)' names a partial function from acts of reference to objects. (It is partial because of the possibility of reference failure.) z_n ranges over demonstrative constructions, where the subscript ' n ' is a numeral which represents which occurrence of the demonstrative construction is specified. The subscript is needed because there may be more than one act of reference using the same demonstrative construction (e.g., 'he') in the utterance of a single sentence.³

Burge relativizes the truth predicate in such a way that the demonstrated sentence appears on the right-hand side of the biconditional in the truth clause. The conditions of normal reference guarantee the semantic properties of each demonstrative construction. For example, 'That is a St. Bernard' and 'I am healthy' become

$$(1) \quad \forall x \forall y (\text{Reference}(x) \ \& \ \text{By}(x, p) \ \& \ \text{At}(x, t) \ \& \ \text{With}(x, \text{'that'}, \text{'That is a St. Bernard'}) \ \& \ \text{To}(x, y) \rightarrow (\text{'That is a St. Bernard' is true with respect to } p \text{ at } t \leftrightarrow \text{St. Bernard } ([y])),^4$$

and

$$(2) \quad \forall x \forall y (\text{Reference}(x) \ \& \ \text{By}(x, p) \ \& \ \text{At}(x, t) \ \& \ \text{With}(x, \text{'I}_3, \text{'I am healthy'}) \ \& \ \text{To}(x, y) \ \& \ y = p \rightarrow (\text{'I am healthy' is true with respect to } p \text{ at } t \leftrightarrow \text{Healthy } ([y])),$$

respectively. The subscripts are arbitrary. Notice the added condition in (2):

' $y = p$ '. This guarantees that the speaker is also the person being referred to, as needed to represent the semantic properties of 'I'.

The satisfaction axioms for open sentences containing demonstratives are the usual axioms for open sentences. If there is no act of reference with these constructions, then the free variables specifically indexed to represent demonstrative constructions receive different assignments by different sequences. However, if used in an act of reference, then all sequences assign to the free variable employed in the demonstrative construction the appropriate object referred to. In this way, demonstrative constructions are purely referential, because the object is referred to no matter how it is demonstrated. So, Burge says, the relevant open sentence is true, with respect to a person p 's reference at time t , just in case (a) it has no free variables that do not represent demonstrative constructions being used, and (b) it is satisfied by all sequences.⁵

II

Belief *de re* is belief of a thing (*res*), as opposed to belief in a proposition (belief *de dicto*). Belief *de re* is also represented by open sentences. Citing

- (3) Orcutt believes the proposition that someone is a spy

and

- (4) Someone in particular is believed by Orcutt to be a spy,

as uncontroversial cases of belief *de dicto* and *de re*, respectively, Burge represents (3) and (4) by

- (3a) $B_d(\text{Orcutt}, \lceil (\exists x)\text{Spy}(x) \rceil)$ ⁶

and

- (4a) $(\exists x) (B_r(\text{Orcutt}, \langle x \rangle, \lceil \text{Spy}(y) \rceil))$.

The usual, but unsatisfactory, way to distinguish (3) from (4) is to use a substitutivity criterion: in belief *de re*, we may substitute *salva veritate* any term which correctly describes the object of belief. Failure of substitution *salva veritate* in the content clause of a belief ascription shows the belief to be *de dicto*. Acknowledging Castañeda, Burge shows that this criterion is unsatisfactory; for there are sentences which express belief *de re*, but for which substitutivity fails.⁷ We may say, e.g., that

- (5) Alfred believes that the man in the corner is a spy

is *de re*: Alfred's belief is about *that* particular man. At the same time, we may not allow substitution of some other term denoting the man in the corner, e.g., 'the firstborn in Kiev in 1942': Alfred's belief may involve thinking of the person as the man in the corner, without thinking of him as the first born in Kiev in 1942. Substitution in (5) fails because the description 'the man in the corner' is performing two functions at once; it both picks out the relevant *res* and it characterizes Alfred's conception.

Given the inadequacy of the substitutivity criterion, Burge seeks to represent the *de re/de dicto* distinction from a particular semantic and epistemic viewpoint. From the semantic viewpoint, belief *de re* is belief in which the believer is related to both an open sentence and to an object (*res*). For example, (5) may be represented as a belief *de re* either by

- (5a) $B_r(\text{Alfred}, \langle \text{the man in the corner} \rangle, \lceil \text{Spy}(y) \rceil)$

or by

- (5b) $B_r(\text{Alfred}, \langle \text{the man in the corner} \rangle, \lceil \text{Spy}([y](\text{Man}(y) \ \& \ \text{In}C(y))) \rceil)$,

where the square brackets and the relevant parenthesis indicate the scope of the demonstrative. The difference between the two is that in (5b), but not in (5a), the notion of a man in the corner is attributed to Alfred.⁸ Constructions like (5) allow the open sentence approach to accommodate sentences whose truth or falsity depends, not simply on what object is referred to *but also on what singular term is used to refer*. Representing Alfred's belief by (5b) avoids any problems with the non-extensionality of 'the man in the corner' by selecting as the appropriate open sentence one which incorporated Alfred's conception of the man in the corner.⁹

From the epistemic viewpoint, a belief *de dicto* is one which is completely conceptualized, and a belief *de re* is a belief "whose correct ascription places the believer in appropriate nonconceptual, contextual relations to the objects the belief is about"¹⁰. Although in either *de dicto* or *de re* beliefs concepts may enter into the believer's relation to the objects the belief is about, in *de re* beliefs such concepts are not involved simply as concepts of the object of belief, or concepts which simply denote or apply to the object of belief.¹¹ In belief *de re*, the believer is related in some direct way to the objects of his belief.

Implicit in both the epistemic and semantic characterizations of the *de re/de dicto* distinction is the crucial role of context. If and only if the believer's belief is completely independent of context is it *de dicto*. To be independent of context, from the epistemic viewpoint, is for the belief to be fully conceptualized; from the semantic viewpoint, it is for the believer to be related to a fully expressed proposition (dictum), whose truth value is not relative to an interpretation of the belief ascription in a particular context. Expressions or ascriptions of *de dicto* belief must completely individuate their denotations (if any), for any contextual (or indexical) element in a belief ascription is sufficient to make the belief *de re*.

III

Now consider the sentence

- (6) Jake believes that I am healthy.

The pronoun 'I' in (6) functions as what Castañeda calls an indicator in *oratio obliqua*, and does so on the following syntactic, semantic and pragmatic grounds: (i) it has no antecedent in the immediate discourse; (ii) there is no indication of how the person to whom the belief is attributed (Jake) refers to the person indicated indexically (the speaker); (iii) the indexical reference is made by the speaker, and not by the person to whom belief is attributed.¹²

(6) is a clear case of a *de re* belief since the presence of an indexical, used deictically in a surface content clause seems sufficient to make the context *de re*.¹³ Using the scheme offered by Burge in 'Belief *De Re*', (6) would be represented as

- (7) $B_r(\text{Jake}, \langle I_2 \rangle, \lceil \text{Healthy } [z] \rceil)$,

where 'z' represents some unspecified indexical construction which Jake uses to pick out me.

The truth conditions for (6) can be supplied by Burge's work on demonstrative constructions, as in

- (8) $\forall x \forall y (\text{Reference}(x) \ \& \ B_y(x, p) \ \& \ \text{With}(x, \langle I_2 \rangle, \text{'Jake believes that I am healthy'}) \ \& \ \text{To}(x, y) \ \& \ p = y \rightarrow (\text{'Jake believes that I am healthy' is true with respect to } p \text{ at } t \leftrightarrow B_r(\text{Jake}, \langle y \rangle, \lceil \text{Healthy } [z] \rceil)))$.

As represented by (8), the speaker's reference to himself by means of 'I' in (6) is taken care of in the antecedent by ' $p = y$ ', which guarantees that the speaker is referring to himself, and in the expression beginning with 'With', which guarantees that the speaker is referring by means of use of 'I'.

Castañeda would treat (6) somewhat differently. On the one hand, the 'I' in (6) is ineliminable for its user.¹⁴ On the other hand, on analysis, the 'I' in (6) is not in *oratio obliqua* at all, but rather lies outside the scope of the cognitive verb.¹⁵ Most controversial, however, is Castañeda's treatment of (6) in terms of properties. We shall argue that on one plausible understanding of Castañeda's use of properties, Castañeda and Burge are not as far apart as they might seem.

Castañeda offers two analyses of sentences like (6). (6) may be analyzed nonperspectively as

- (9) There is a *property* ϕ such that: (i) I am the only person who is ϕ and (ii) Jake believes that the only person who is ϕ is healthy.

But Castañeda offers an analysis in terms of perspectival properties as well. Let ϕ_p be a perspectival property, or *property* (italicized), from Jake's point of view, by means of which he picks me out. Let ' $\phi_{p/I}$ ' be the name of the *property* formed by replacing the indicators in the linguistic formulation of ϕ_p with expressions which I could use on the same occasion to refer to myself. Let ' ϕ_{*p} ' be the name of a permanent and intersubjective version of ϕ_p , where ' ϕ_{*p} ' is formed by replacing each indicator in an expression formulating ϕ_p by its third-person counterpart (or quasi-indicator), so that ϕ_{*p} is someone's way of considering property ϕ_p in *oratio obliqua*. Now the perspectival analysis of (6) in terms of properties is

- (10) There is a perspectival *property* ϕ_p such that: (i) I am the only person who is $\phi_{p/I}$, and (ii) Jake believes that the only person who is ϕ_{*p} is healthy.

For example, if Jake had expressed his belief about me by saying, 'The person over there mumbling to himself now is healthy', then ϕ_p could be the *property* of being a person there mumbling to himself now, and $\phi_{p/I}$ could be the *property* of being a person here mumbling to myself now, and ϕ_{*p} could be the *property* of being a person there mumbling to himself then.

On this reading, the function of Castañeda's properties, both nonperspectival and persepctival, is simply to guarantee that Jake has some way

(perhaps indexical) to pick me out. If Jake did not have some way of picking me out, then his belief would not be *de re*; it would be *de dicto*. Since Burge holds (6) to be a case of belief *de re*, Burge too needs to have some apparatus to serve this function. And he has: 'z' in (7) and (8) serves the same purpose as Castañeda's perspectival properties, for 'z' represents some indexical construction which Jake uses to pick me out. Since Castañeda's perspectival properties play the same role as Burge's 'z' in (7) and (8), and since properties may be treated as predicates, Castañeda and Burge are not as far apart in their analyses as they appear at first glance.

It is less clear how Burge might handle

(11) Jake believes that he (himself) is healthy.

The 'he (himself)' in (11) is not an indicator like the 'I' in (6), but is what Castañeda calls a quasi-indicator,¹⁶ which only occurs in *oratio obliqua*, and which exhibits the following syntactic, semantic and pragmatic characteristics: (i) there is an antecedent in the immediate discourse ('Jake'), outside the scope of the cognitive verb which signals the *oratio obliqua*; (ii) there is a clear indication of how the person to whom belief is attributed (Jake) refers to the person designated quasi-indexically (Jake) — i.e., via 'I'; (iii) the indexical reference is not made by the speaker but is attributed to the person to whom the belief is ascribed (Jake). To indicate the quasi-indexical use of 'he (himself)' in *oratio obliqua*, Castañeda has introduced the term 'he*'. Adopting this usage, (11) becomes

(11a) Jake believes that he* is healthy.

Castañeda has shown that sentences like (11a) are closely tied to first-person reference.¹⁷ (11a) attributes to Jake the belief which Jake would express by asserting

(11b) I am healthy.

The difference between the pronouns in (6) and (11a) is not simply that in (6) the pronoun plays a 'referential' role and in (11a) 'he*' has a pronominal function. Although 'he*', like pronouns with a pronominal role, does facilitate cross-reference, neither is it an abbreviation for its antecedent nor does it otherwise resemble a bound variable.¹⁸ The close logical connection between (11a) and (11b) suggests that (11a) ought to be treated as belief *de re*. (11a) in contrast to (12), attributes to Jake a belief *de re* from Burge's epistemic

viewpoint; (11a) is *de re* because it attributes to Jake a contextual, non-conceptual relation to the object of his belief, i.e., himself. This contextual relation is guaranteed by the fact that, if (11a) is true, Jake would express his belief by means of a first-person reference, as in (11b). Conversely, if Jake's belief could be expressed by

- (12) Jake believes that Jake is healthy,

where 'Jake' merely happens to apply to himself, unbeknownst to himself, then both (11a) would fail to be a correct attribution to Jake, and also Jake's belief would be *de dicto*. Given that (11a) fits Burge's epistemic characterization of *de re* belief, we must see whether or not we get the same result on Burge's semantic characterization of *de re* belief. Is an open sentence mentioned in the representation of the content clause of (11a)?

Castañeda has argued, conclusively in our view, that 'he*' as it occurs quasi-indexically in (11a) is unanalyzable. Taking this as a clue, if Burge were to take 'he*' as a primitive — i.e., as a predicate representing a characteristic function where 'he*' is true of an object if the object is self-aware, and false otherwise — he has the resources to make the proper distinction between (11a) and (12). (11a) and (12) become, respectively,

- (13) $B_r(\text{Jake}, \langle \text{Jake} \rangle, \lceil \text{Healthy } [y] (\text{he}^*(y)) \rceil)$

and

- (14) $B_r(\text{Jake}, \langle \text{Jake} \rangle, \lceil \text{Healthy } [y] \rceil)$.

The close connection between (11a) as represented by (13) and Jake's first-person belief in (11b) is indicated by the singular term '[y] he* (y)'.

On the other hand, owing to the facts that Burge's account of demonstrative constructions was aimed at pronouns which lack an antecedent in the immediate discourse (like (6)), and that the pronouns in (11a) and (12) both have antecedents in the immediate context, it is not obvious that Burge would treat (11a) and (12) along the lines as the treatment of (6). Nevertheless, there is no bar to expanding (11a) to

- (15) $\forall x \forall y (\text{Reference}(x) \ \& \ \text{By}(x, p) \ \& \ \text{At}(x, t) \ \& \ \text{With}(x, \text{'he*}_1', \text{'Jake believes that he* is healthy'}) \ \& \ \text{To}(x, y) \ \& \ y = \text{Jake} \rightarrow (\text{'Jake believes that he* is healthy'} \ \text{is true with respect to } p \ \text{at } t \leftrightarrow B_r(\text{Jake}, \langle \text{Jake} \rangle, \lceil \text{Healthy } [y] \text{he}^*(y) \rceil))$

and expanding (12) to

- (16) $\forall x \forall y (\text{Reference}(x) \ \& \ \text{By}(x, p) \ \& \ \text{At}(x, t) \ \& \ \text{With}(x, \text{'Jake}_2, \text{'Jake believes that Jake is healthy'}) \ \& \ \text{To}(x, y) \ \& \ y = \text{Jake} \rightarrow (\text{'Jake believes that Jake is healthy'} \text{ is true with respect to } p \text{ at } t \leftrightarrow B_r(\text{Jake}, \langle \text{Jake} \rangle, \lceil \text{Healthy } [y] \rceil)).$

Since Burge takes proper names to have an indexical element,¹⁹ (14) is construed as indexical in the absence of any pronoun, and (13) would be construed as indexical regardless of the 'he*'. However, (13) and (14) can be generalized, and truth conditions can be given without requiring a reference on the part of a speaker. (13) becomes generalized as

- (17) $B_r(\text{The unique } \phi, \langle \text{The unique } \phi \rangle, \lceil \text{Healthy } [z] \text{ he}^*(z) \rceil),$

and truth conditions are given by

- (18) 'The ϕ believes that he* is healthy' is true iff
 $B_r(\text{The } \phi, \langle \text{The } \phi \rangle, \lceil \text{Healthy } [z] \text{ he}^*(z) \rceil).$

Also iterated beliefs cause no problem. Consider,

- (19) Jake believes that Ralph believes that he (himself) is healthy.

This sentence is ambiguous between two readings: (i) where Jake is attributing self-awareness to Ralph about Ralph's healthiness and (ii) where Jake believes of himself that Ralph believes that he (himself), Jake, is self-aware of his own healthiness. Both readings are easily handled. (i) becomes

- (19a) $B_r(\text{Jake}, \langle \text{Ralph} \rangle, \lceil B_r(\text{Ralph}, \langle \text{Ralph} \rangle, \lceil \text{Healthy } ([y] \text{ he}^*(y)) \rceil) \rceil)$

and (ii) becomes

- (19b) $B_r(\text{Jake}, \langle \text{Ralph} \rangle, \lceil B_r(\text{Ralph}, \langle \text{Jake} \rangle, \lceil \text{Healthy } [y] \text{ he}^*(y) \rceil) \rceil)$

and even though there could, in fact, be an arbitrary number of embeddings, no problem would arise. If the reading (ii) is desired, then the person to whom people are attributing self-awareness stands where the last occurrence of 'Jake' does in (19b), i.e., as in (20):

- (20) $B_r(\text{Jake}_n, \langle \text{Ralph} \rangle, B_r(\text{Ralph}_{n-1} \langle \text{John} \rangle, \lceil B_r(\text{John}_{n-2} \langle \text{Jim} \rangle \dots \lceil B_r(\text{Sue}_1 \langle \text{Jake} \rangle \text{Healthy } ([y] \text{ he}^*(y)) \rceil) \dots \rceil) \rceil) \rceil)_{n+1}$

If reading (i) is desired, then the person to whom people are attributing self-awareness stands in place of the last occurrence of 'Jake' in (20).

The truth conditions for (19a) and (19b), and hence all such embeddings follow easily. They are

- (21) $\forall x \forall y (\text{Reference}(x) \ \& \ \text{By}(x, p) \ \& \ \text{At}(x, t) \ \& \ \text{With}(x, \text{'he*'}, \text{'Jake believes that Ralph believes that he* is healthy'}) \ \& \ \text{To}(x, y) \ \& \ y = \text{Ralph} \rightarrow (\text{'Jake believes that Ralph believes that he* is healthy' is true with respect to } p \text{ at } t \leftrightarrow B_r(\text{Jake}, \langle \text{Ralph} \rangle, \lceil B_r(\text{Ralph}, \langle \text{Ralph} \rangle \lceil \text{Healthy}[y] \text{he*}(y) \rceil \rceil))$

and

- (22) $\forall x \forall y (\text{Reference}(x) \ \& \ \text{By}(x, p) \ \& \ \text{At}(x, t) \ \& \ \text{With}(x, \text{'he*'}, \text{'Jake believes that Ralph believes that he* is healthy'}) \ \& \ \text{To}(x, y) \ \& \ y = \text{Jake} \rightarrow (\text{'Jake believes that Ralph believes that he* is healthy' is true with respect to } p \text{ at } t \leftrightarrow B_r(\text{Jake}, \langle \text{Ralph} \rangle, \lceil B_r(\text{Ralph}, \langle \text{Jake} \rangle, \text{Healthy}([y] \text{he*}(y)) \rceil \rceil)$

From this it is easy to see how self-awareness is guaranteed. On the left side of the biconditional the person to whom reference is being directed is identical with the person whose belief is being asserted as true.

Burge's analysis can accommodate Castañeda's indicators and quasi-indicators, if the primitive 'he* (y)' is added to Burge's theoretical vocabulary. This appears to be the only way the extension can reasonably be made, and Burge's analysis is sensitive enough to make it.²⁰

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NOTES

¹ See Hector-Neri Castañeda, "'He": A study in the logic of self consciousness', *Ratio* 9 (1966), pp. 130-157; 'Indicators and quasi-indicators', *American Philosophical Quarterly* 4 (1967), pp. 85-100; 'On knowing (or believing) that one knows (or believes)', *Synthese* 21 (1970), pp. 187-203; 'On the logic of attributions of self-knowledge to others', *Journal of Philosophy* 65 (1968), pp. 439-456; 'On the logic of self-knowledge', *Nous* 1 (1967), pp. 9-21.

² Tyler Burge, 'Belief *De Re*', *Journal of Philosophy* 74 (1977), pp. 338-362 and 'Demonstrative constructions, reference and truth', *Journal of Philosophy* 71 (1974), pp. 205-223.

³ Burge, 'Demonstrative constructions, reference and truth', p. 206.

⁴ The brackets, introduced by Burge, are used to indicate the free variable in the singular term. A bracketed singular term

(a) $x_i A_j^i(x_1, \dots, x_i, \dots, x_n)$

is formally equivalent to

$$(b) \quad (\exists z) A_i^n(x_1, \dots, z, \dots, x_n \ \& \ z = x_i).$$

Because x_i is not bound in (b), it is not bound in (a) and may be quantified from the outside. In case the singular term contains no predicates, (a) is equivalent to

$$(c) \quad (\exists z)(z = y).$$

⁵ *Ibid.*, p. 213.

⁶ Our use of corner quotes resembles that of John Wallace in 'Belief and Satisfaction', *Nous* 6 (1972), pp. 85–97.

⁷ Burge, 'Belief *De Re*', p. 341.

⁸ *Ibid.*, p. 342.

⁹ Brian Loar has an excellent discussion of these and related points in 'Reference and propositional attitudes', *Philosophical Review* 80 (1972), pp. 9–21.

¹⁰ Burge, *op cit.*, p. 346.

¹¹ *Ibid.*

¹² See Castañeda, '“He”': A study in the logic of self-consciousness', and 'Indicators and quasi-indicators' for detailed discussions of indicators.

¹³ Burge, *op cit.*, p. 347.

¹⁴ Castañeda, '“He”': A study in the logic of self-consciousness', pp. 148–151.

¹⁵ Castañeda, 'Indicators and quasi-indicators', p. 90.

¹⁶ See Castañeda, '“He”': A study in the logic of self-consciousness' and 'Indicators and quasi-indicators' for detailed discussions of quasi-indicators.

¹⁷ Castañeda, '“He”': A study in the logic of self-consciousness', 'Indicators and quasi-indicators', and 'On the logic of attribution of self-knowledge to others'.

¹⁸ See Lynne Rudder Baker, 'Indexical Reference in *Oratio Obliqua*', forthcoming, and the references listed in Note 1.

¹⁹ Tyler Burge, 'Reference and proper names', *Journal of Philosophy* 70 (1973), pp. 425–429.

²⁰ We are grateful to Professor Tyler Burge and Professor Philip Kitcher for their comments on earlier drafts of this paper.