Indeterminacy and reference: Comments on *Roads to Reference*

Panu Raatikainen[1]

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The early 1970s marked a real sea change in the philosophy of language. Kripke (1972/1980), Donnellan (1970), Putnam (1975), and others made severe attacks on descriptivism, which had been until then the dominant view. Kripke also sketched an alternative view of reference, his famous causal-historical chain picture. This new theory of reference (in short: NTR), as this general approach is often called, has become quite popular. But still, some able philosophers resist the trend and aim to salvage descriptivism.

Roads to Reference: An Essay on Reference Fixing in Natural Language by Mario Gómez-Torrente (2019) is a substantive addition to the literature on the theory of reference. On the one hand, the central aim of Gómez-Torrente is to further undermine descriptivism; as such, his contribution belongs quite obviously to the Kripkean tradition. Indeed, he writes, "some of the main considerations in practically all of the chapters seek to establish broadly Kripkean views, often via extensions or refinements of broadly Kripkean insights" (p. viii). On the other hand, his focus is often quite different from the common discussions in that tradition.

The scope of the book is wide. It is hardly surprising that Gómez-Torrente discusses proper names and natural kind terms; demonstratives are quite a common theme in the theory of reference too. However, perhaps more unexpectedly, the book also deals with numerals and color expressions. I found the discussions of the latter intriguing; it is surprising how complicated things can get even with such apparently simple expressions. However, I do not

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[1] Tampere University, Tampere, Finland

e-mail: panu.raatikainen@tuni.fi

really have anything original to add about them. Therefore, I will set them aside here and focus on more typical themes: names and kind terms.

As a flag-carrying anti-descriptivist myself, I warmly welcome the critical treatise by Gómez-Torrent. I do not feel any necessary need to question him. "Our agreement runs pretty deep," as Quine once said of Davidson and himself. I will present below some thoughts that naturally came to my mind while reading the book in order to generate some further discussion. My remarks are more complementary and expressions of differences of emphasis rather than of any deep disagreement about the substantive issues. I will put forward some questions only in order to be replied to, and hopefully in that way advance our collective understanding of the topic. As it happens, I have myself discussed these themes recently in some detail (see Raatikainen 2020, 2021).[2] In what follows, I will also briefly relate and compare our respective views.

1 Proper names and indeterminacy

The main target of Kripke and others was what might be called *standard descriptivism*: this is the view that the meaning of a referring expression (for a language user) is given by a set of descriptions the language user analytically associates with the expression, and those descriptions also determine the reference of the expression. Kripke also considered in passing a more minimal version of descriptivism. Such *weak descriptivism* says nothing about meaning but only contends that the reference of an expression is determined by a bunch of descriptions associated with it (Kripke 1972/1980, pp. 31–32). Kripke added that "some of the attractiveness of the theory [descriptivism] is lost if it isn't supposed to give the meaning of the name"; this is because it is not clear that such a weak theory can still solve the so-called Frege's puzzles that concern meaning (Kripke 1972/1980, p. 33), which has always been the key motivation of descriptivism. All in all, it is standard descriptivism – that is, descriptivism understood as a theory of meaning – that is a well-motivated, natural, and unified whole, as well as the main target of NTR (see Raatikainen 2020).

Whether standard or weak, in the more traditional versions of descriptivism, the relevant descriptions have typically involved, for example, famous deeds of a historical figure or other properties commonly associated with the bearer of the name ("the author of *Odyssey*," "the flagship of Lord Nelson," or "the capital of Iraq," for example).[3] In contrast, some more recent friends of descriptivism, who want to neutralize the critical arguments of Kripke and others, aim to reintegrate Kripke's alterative causal-historical picture into their putative descriptions. This new variant of descriptivism is conventionally called "causal descriptivism." It is quite different from more traditional versions of descriptivism, as its descriptions involve nothing like famous deeds and such.

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[2] Both these papers were written before I had had the opportunity to read Gómez-Torrente's book.

[3] Often (as here) such descriptions include other proper names, but the assumption obviously is that all proper names can be eventually eliminated with the help of descriptions (and similarly for natural kind terms).

Gómez-Torrente takes it more or less for granted that traditional standard descriptivism has been refuted for good (see p. 60) and focuses on weak descriptivism. In particular, in the case of proper names, he concentrates on more recent causal descriptivism.[4] More specifically, Gómez-Torrente takes here as his main target the view according to which competent language users know, by virtue of their linguistic competence with a name, that the name and a suitable (causal) description are co-referential. To be sure, the correct description may be very hard to come by without intensive coaching, but it is, according to the view at issue here, known implicitly nevertheless. Gómez-Torrente ascribes such a view to Jackson (2010), for example. Gómez-Torrente does a good job of showing just how complicated (and in reality, probably even much more complicated) such descriptions should really be.

It is my impression that opponents of NTR often criticize it for assuming an unrealistically determinate reference. Gómez-Torrente, however, turns the tables on descriptivism and contends that it is descriptivism which gets into troubles with (certain kinds of) indeterminacy. He argues that in addition to some simple and familiar cases, there are more complex scenarios in which it is quite unclear to what, if anything, an expression refers. To support this claim, he considers several thought experiments, some of which are related to reference borrowing, and some to the introduction of a new expression. I must admit that in the case of particular scenarios involving clairvoyance that Gómez-Torrente uses, my intuitions go blank and I really do not know what to think about them. Fortunately, he also presents other scenarios which seem to me to support the intended conclusion more clearly.

It is important to recognize that the indeterminacy here is not of a modest sort, involving blurry boundaries and unclear borderline cases or such, but quite radical indeterminacy in the sense that there may be, in some cases, more than one equally plausible, fully distinct candidate for the referent of an expression, or it may be deeply unclear whether an expression refers to a certain entity or fails completely to refer to anything. Without being aware of it, the relevant language user may have intentions that are in some situations in conflict and pull in different directions. Gómez-Torrente argues that the recent versions of descriptivism he focuses on tend to entail determinacy of reference (or determinate reference failure) in many such situations where the issue is intuitively not at all determinate.

It seems to me that the indeterminacy argument of Gómez-Torrente indeed has force against the kind of descriptivism he takes as his target, which assumes the knowledge that the name and a suitable (causal) description are co-referential, and hence descriptions which give necessary and sufficient conditions known by a competent language user. He then sketches a picture of various conventions which he thinks plausibly govern reference. Gómez-Torrente emphasizes that what he presents are not intended to be necessary and sufficient conditions, but merely a probably incomplete bunch of sufficient conditions for reference.

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[4] Causal descriptivism is quite implausible as a theory of meaning (see Raatikainen 2020); consequently, it is reasonable for its advocates to interpret it as a version of weak descriptivism only from the beginning.

Given how central a role indeterminacy plays in his arguments, it is something of a pity that Gómez-Torrente does not show any awareness of Field's notion of *partial reference* or Devitt's idea of *multiple grounding*. Namely, Field (1973) has argued that at some point in their history, some scientific terms have been referentially indeterminate, and he has introduced different notions of partial reference. Generalizing the idea, Devitt (1981) has suggested that the causal-historical theory of reference should be complemented with the idea of partial designation. An expression may in that way, at some period in time, partially refer to more than one different extension (or apparently also partially refer, and partially fail to refer). Devitt has also suggested from early on (see Devitt 1974, 1981) the idea of "multiple grounding" – that it is not only the initial baptism that determines the reference: rather, a name typically becomes multiply grounded in its bearer in other uses of the name relevantly similar to the initial baptism. In other words, also other uses may involve the application of the word to the object in perceptual confrontation with it (see Devitt 1981, pp. 57–58; Devitt & Sterelny 1999, pp. 75–76). Among other things, these developments in the causal-historical theory enable it to accommodate changes of reference, which Gómez-Torrente gives an important role. They also allow that the reference of an expression may become increasingly determinate as time passes. It would have been interesting to know how Gómez-Torrente would relate his own ideas to those mentioned above.

Be that as it may, given that descriptivism has already been given so much slack, someone might now perhaps wonder why exactly a descriptivist could not, in the face of the critique of Gómez-Torrente, still retreat to what we might call "sufficient condition descriptivism"; that is, to the view which contends only that reference and reference failure in clear cases are determined by sufficient conditions which the language user (implicitly) associates with the expression and referring expressions in general. Instead of descriptions which aim to give necessary and sufficient conditions, such descriptions might have (very roughly) forms such as, e.g.:

$$[D_1(x) \to \text{``}N_1\text{''} \text{ refers to } x] \ \land \ [\neg D_2(x) \to \text{``}N_1\text{''} \text{ refers to nothing}]; \text{ or}$$

$$[D_3(x) \to \text{``}N_2\text{''} \text{ refers to } x] \ \land \ [D_4(y) \to \text{``}N_2\text{''} \text{ refers to } y];$$

where $D_1(x) - D_4(x)$ reflect the relevant conventions and sufficient conditions Gómez-Torrente sketches. Perhaps such descriptions could even absorb Field's idea of partial reference, for example. It is not immediately clear to me why such a move would be, in this context, in principle inadmissible. Once weak descriptivism has been taken seriously, this may not look too extreme a further allowance. The crucial question now is: Do we have any good grounds for rebutting such a version of descriptivism?

My own tentative first reaction is, very briefly, the following: On the one hand, I would myself emphasize (as I have done elsewhere; see Raatikainen 2020), more than Gómez-Torrente, from the beginning that the move from standard descriptivism to weak descriptivism amounts to a rather serious concession from the side of descriptivism – I would press just how impotent weak descriptivism in general and causal descriptivism in particular are with respect to the philosophical work descriptivism was almost always supposed to do; in particular, it cannot even begin to deal with Frege's puzzles. Such watered-down and *ad*

hoc versions of descriptivism barely deserve the name – they only preserve the letter but not the spirit of descriptivism (see Raatikainen 2020). Therefore, there are good reasons to claim that descriptivism should not be given so much slack to begin with.

On the other hand, one could question the *psychological plausibility* of all such views. I contend that our (in all likelihood still incomplete) knowledge of relevant linguistic conventions is theoretical, empirically grounded, and propositional (not a mere skill). It is not plausible that our (still rough and incomplete) knowledge of them is grounded on mere competence with a particular referring expression, say, "Aristotle," "Santa Claus," or "Madagascar." I would argue it is rather based on a wide, observation-based knowledge of how language works with decades of philosophers' collective attempts to scrutinize the phenomenon of linguistic reference. It just seems to be a fact of life that our early ancestors, for example, when they first began to use demonstratives, names, or natural kind terms to refer to things and kinds, did not first accept or internalize such a highly complex theory of reference. The alternative that the latter would be innate seems also fantastic. The ability to refer successfully simply does not require the possession (however implicitly) of a theory.

Furthermore, a vicious *regress* or *circularity* may threaten such views. That is to say, whatever their exact logical form, for the needs of descriptivism, the knowledge at stake must obviously result some kind of mental descriptions. But how do the constituent parts of those mental descriptions achieve their referential relations to the external world? It is not plausible that we are directly acquainted with all their referents. These mental descriptions are likely to contain themselves mental counterparts of names, demonstratives, and kind terms. In virtue of what do they refer to their referents and extensions if successful referring is only possible when the language user possesses such descriptions? Consequently, I may be more skeptical than Gómez-Torrente concerning the knowledge of the relevant conventions by an arbitrary language user.

Finally, one may wonder whether such a view makes its descriptions *parasitic* and *redundant*. Namely, if causal descriptivism in some form is true, it grants that a name "*N"* stands in a causal-historical relationship, *R*, to its bearer; however, the relation *R* alone is then sufficient to explain reference, and the further claim that the language user associated description involving *R* with the name is redundant (see Devitt & Sterelny 1999, p. 61; cf. Kripke 1972/1980, p. 70; Raatikainen 2020, p. 91).

Note that all these potential objections apparently apply to both the version of descriptivism which Gómez-Torrente focuses on (requiring the knowledge that the name and a suitable description are co-referential) and the weaker version sketched above (with a mere incomplete list of sufficient conditions). But perhaps Gómez-Torrente has some ideas of his own as to why the above-sketched move – i.e., "sufficient condition descriptivism" – would be problematic. If so, it would be interesting to know what he thinks about these issues.

2 Natural kind terms: Ordinary and scientific

One clear merit of Gómez-Torrente's discussion of natural kind terms is that it takes seriously into account the certain worries of many philosophers of science (in particular, what Gómez-Torrente calls "the arbitrariness objections") and distinguishes (what he calls) "ordinary natural kinds" and "structural scientific kinds" more clearly than has often been done in the philosophy of language. (In the philosophy of science literature, expressions referring to ordinary natural kinds have sometimes been called "vernacular kind terms.")

In many respects, Gómez-Torrente's discussion of natural kind terms comes quite close to my own views on them (see esp. Raatikainen 2021). In agreement with him, I have argued myself that certain brief remarks by Kripke and Putnam notwithstanding, NTR does not necessarily require naïve and strong micro-essentialism (intrinsic micro-essences, necessary and sufficient conditions for belonging to a natural kind with sharp boundaries; *ibid*.). I wholeheartedly agree with Gómez-Torrente that a certain tolerable degree of indeterminacy in the reference of kind terms does not refute the core ideas of NTR. In particular, it emphatically does not vindicate descriptivism. Again, I would add that complementing the causal-historical picture with something like Field's notion of partial reference seems fruitful to me (*ibid*.). Arguably what are truly essential for NTR are the arguments from ignorance and error (see Raatikainen 2020, 2021). However, the latter do not necessarily require strict identities between ordinary kinds (such as water) and scientific structural kinds (such as H_2O), as some critics of NTR seem to tacitly assume. Just as Gómez-Torrente suggests, the former may just be more indeterminate than the latter. (Another possibility, one which I have reflected on in (Raatikainen 2021) is that the "essence" (loosely speaking) of a natural kind may in some cases have a nature of a cluster; but one which is discovered only *a posteriori*, step by step, as empirical science advances.) Even so, I contend that if, for example, a liquid contains neither oxygen nor hydrogen, it is just not water, even if it were superficially indistinguishable from water (note that what I am suggesting here are some necessary but not sufficient conditions; Gómez-Torrente seems to agree). The possibility of cases such as these is quite enough for NTR and its key arguments from ignorance and error against descriptivism. Moreover, one still gets necessary *a posteriori* truths, the existence of which was a central radical conclusion of Kripke.

As for ordinary natural kinds and their indeterminacy, Gómez-Torrente ingeniously compares them to ordinary objects. He argues that somewhat blurry ordinary kinds are not really any more problematic than somewhat blurry ordinary objects, the existence of which few want to deny. Gómez-Torrente concludes on that basis that ordinary natural kinds both exist and are irreducible to exact structural scientific kinds. I found these reflections fresh and quite convincing.

Gómez-Torrente prefers to focus mostly on ordinary natural kind terms. There is obviously nothing wrong with that as such, but I am myself inclined to think that scientific (or protoscientific) natural kind terms[5] best harmonize with NTR (or "the Kripke-Putnam

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[5] Ones whose identification nevertheless involves observation. Highly theoretical natural kind terms may, on the other hand, be descriptive (see Raatikainen 2020, 2021).

picture"). That is to say, with ordinary kinds, there may sometimes be many interests besides (proto-) scientific ones, such as the interest of a handicraft or culinary art, for example, in play. Such interests may be in tension with (proto-) scientific interests and result in different ways of carving reality at its joints[6] (though, surely sometimes scientific interests may begin to dominate). Ordinary kinds may involve at best a vague intuitive idea of a "substance" and its "nature" (just like Gómez-Torrente suggests) and be quite indeterminate. Some of them may even be more or less observational.

Natural kinds which are first identified in the context of protoscience or more advanced science, in contrast, may be assumed to have a quite specific underlying nature, and there are no competing non-scientific interests. The introduction of the respective terms may involve more sophisticated associated descriptions, in terms of causal roles, for example (even if the microphysical "essence" of the kind or other relevant underlying features are still unknown). Their extension may be more determinate from the beginning (though I do not intend to suggest that they must have absolutely sharp boundaries from the start either). It seems to me that it is such terms that best fit the picture suggested by NTR: the expectation that the kind has an underlying though still unknown nature which future science can reveal is present from the initial introduction of the respective kind term. Oxygen, discussed by Hendry (2010), may be a good example (see also Raatikainen 2021 for a brief discussion of a few other cases).

Furthermore, I contend that just like expressions such as "Madagascar" and "turkey" have been able to switch reference (a possibility that Gómez-Torrente, following Evans (1973), emphasizes), a kind term can sometimes gradually evolve, along increasing perceptual contacts with samples ("multiple grounding"; see above) and growing knowledge of the kind, from an indeterminate vernacular kind term to a more determinate protoscientific kind term. This is a sort of meaning change, but not one that would result in radical meaning variance and incommensurability, and would therefore threaten the progressivity of science (along the lines that Kuhn and Feyerabend once suggested). However, in other cases a kind term may remain "ordinary," and/or some interests other than the scientific may dominate. Some such refinements of meaning may even be stipulative, but this does not entail that the nature of such a kind must be downright conventional. There may still be room for ignorance, error, and discovery of the relevant underlying features.

Now that we are talking about natural kinds, a point I would like to underline is the following: even if the introduction of natural kind terms required, more necessarily than with proper names, descriptions, the following is still arguably the case: If proper names can be borrowed, there does not seem to be any principled reason to deny that natural kind terms can also be borrowed. Then the causal-historical chain of transmission of a term again secures successful reference, and an arbitrary user of the term may be rather ignorant and even have mostly false beliefs about the kind. The situation is quite analogous to that of proper names. Somewhat strangely, this aspect of natural kind terms has received very little attention in the literature. (I have attempted to do a little better; see Raatikainen 2020, pp.

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[6] I think that the much-discussed case of jade, where people began to count two different minerals as jade, is an example (cf. Gómez-Torrente 2019, pp. 152–53, 190).

96–97.) Gómez-Torrente, however, is a happy exception, as he recognizes this aspect too (though he does not emphasize it). However, as Gómez-Torrente also notes, already this is enough to rebut standard versions of descriptivism in the case of natural kind terms.

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