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Two models of truth

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Ten years ago vagueness, or more generally imprecision, was an oddity. Finally we have appreciated that it is a difficult, important topic. One reason is that imprecision makes for difficulties with applying the concept of truth. In so far as imprecision is ubiquitous, so are these problems. But many still think that we can and do sometimes have complete precision. I say this is a mirage, and it's important to see how the illusion arises.

This illusion arises simply because ordinarily we ignore imprecision. Maps provide an analogy: no map is perfectly precise. But for the maps we trust we ignore their imprecision and just use them. For language we do the same, but language has an additional social component. It's a familiar idea that in conversations there is a 'common ground' of 'presuppositions', that is statements that all agree are, or at least can be, treated as true. This is a very general phenomenon, for example, also occurring in the Kuhnian idea of a disciplinary matrix. Equally, in conversations, we agree about where we can ignore imprecision, perhaps as a default mode.

For good practical reasons, we all operate with what I call the 'cut to the chase' principle. At some point we have to stop worrying about imprecision and just *use* the statements that we take to be true or at least reliable. Our

statements don't have to *be* precise. It's good enough for us just to ignore imprecision. The need to cut to the chase generates a kind of 'pseudoprecision' – on the occasions on which we ignore the imprecision of a term we treat it as if it were precise. To treat a term in recognition of its fuzzy edges is in some way actively to take the fuzzy edges into account. The other way around, if we ignore fuzzy edges we use a term in the same way as we would if it had no fuzzy edges.

Imprecision is ubiquitous, usually unproblematically so in practice by application of the cut to the chase principle. But ubiquitous imprecision generates a theoretical problem: if our statements¹ are not, in fact, precise, how can they, in fact, be true (or false)? As recently explained by Braun and Sider (2007), the problem is that imprecision robs us of our familiar way of thinking about truth, the familiar model of a (determinate) referent of a term instantiating a (determinate) property expressed by a predicate.

Here is a summary of Braun and Sider's argument (2007: 134):

- (1) Assume that semantic values, in particular propositions, are precise.
- (2) Assume that for a statement to be true is for the statement to express a true proposition.
- (3) Further factual claim: Statements are always (or almost always) imprecise.
- (4) From (1) and (3): Statements do not (or rarely) express any proposition.
- (5) From (2), and (4): Statements are never (or rarely) true (or false).

The problem is not so easily evaded. For example, deflationists say: All you need to understand truth are the Tarski biconditionals,

'Snow is white' is true iff snow is white.

But, a point I learned from Lije Millgram (2009: 37–39), such Tarski biconditionals don't do the intended job if the sentence on the right hand side is just displayed. It has to be understood in an assertoric mood. And what is asserted? We are once again in the dark unless we can say that we are asserting of the referent of 'snow' that it has the property expressed by 'white', which we can't do if no determinate property and kind of substance are picked out.

Another attempt to resolve the problem works by attempting to eliminate imprecision. There has been much discussion of the case of 'flat', revolving around the idea that context provides a standard of precision – flat for a pool table, flat for a ball field. Such moves reduce but do not eliminate imprecision

1 I will work with the term 'statements' rather than 'sentences' or 'utterances'. I want to address the what is said rather than the way it is said. But I don't want to use the term 'proposition', because at least many will presuppose that propositions are precise, while I want a term for something that admits of imprecision.

(Is there a perfectly precise standard of flatness that pool tables are supposed to meet? Ball fields?)

In short, imprecision can always be reduced but rarely, if ever, completely eliminated.² So a model of truth that requires complete precision does not, except as an idealization, give us literal truths.

Braun and Sider respond to the problem by giving up on (literal) truth. They argue

Speaking vaguely (as always), there is a range of *legitimate disambiguations* for a vague expression. . . . When all the legitimate disambiguations of a sentence are true, call that sentence *approximately true* . . .

Next

[T]ruth is an impossible standard that we never achieve.

So:

[O]rdinarily speakers typically and harmlessly ignore vagueness. And when doing so, it is reasonable to speak [not the truth, but, in our technical sense] . . . the approximate truth. (135)

I agree with Braun and Sider about the problem, but I'm not prepared to conclude that nothing, or almost nothing, we say is ever, literally, true. Truths are commonplace, and a view, or a model as I will call it, that says that there are no literal truths is in so far defective. The familiar model of determinate properties applied to determinate referents isn't working as we thought it would. So we need an alternative model that is consistent with ubiquitous imprecision but on which much of what we say does count as, literally, true.

Before beginning, I should explain my methodology.³ Will I be claiming to uncover the 'real' conception of truth? Will I be proposing to substitute a new conception for what we seem to have now? Adopting a methodology that is today much discussed in philosophy of science, I will instead take the following attitude. To attribute truth to a statement is to evaluate it for success in its representational function. But in our messy world, such a success is an exceedingly complex affair. As with any complex subject matter the best we can do is to offer idealized models that get part of it 'right', which models we then evaluate for their strengths and weaknesses. This, in practice, is the best that science has to offer.

Let me introduce my alternative model building strategy with an analogy. Imagine a map drawn extremely precisely, representing the distances between

2 The only part of language that might be completely free of imprecision is finite, or combinatorial mathematics, including sentence logic.

3 Indeed, this article, by way of illustration, is as much about methodology in understanding language as it is about truth.

points A and B, and between A and C. If you get out your ruler you will see that the distance represented between A and B is just a bit greater than the distance represented between A and C. This map is, in fact, inaccurate. The distances are actually the same.

Now imagine a second map that looks like the first but out of focus. The A-B and A-C lines are fuzzy, fuzzy enough so that there is no discerning which, if either, distance is represented as greater. So this second map ‘washes out’ the slight inaccuracy of the first map. The inaccuracy has been ‘swallowed up’ by its imprecision. Within the level of precision that it can afford, the map makes no mistakes.

I have illustrated the idea of a tradeoff between imprecision and inaccuracy. Inaccuracies can be smoothed over by sweeping them under the rug of imprecision. I will fill in this analogy for statements showing a way of thinking about truth on which we can turn false precise statements into true imprecise ones.

How should we understand the statement that John’s height is six feet? To avoid what might be criticized as ‘loose talk’, we can understand this as

John’s height is six feet **PRECISELY**.

But no one is precisely six feet tall. The whole idea of precise heights of people has no application. People’s heights go up and down half an inch a day. What posture? How much hair and dandruff? There are the complications of frame relativity of length in special relativity, of indeterminacy of position in quantum mechanics . . . If one tries to cut through these difficulties by saying ‘at a moment of time’, just what posture, etc. one is idealizing in the extreme, and anyway surely departing from what one might have meant by saying that John’s height is six feet. Saying that John’s height is six feet precisely is to say something that is false or defective in some other way.

But saying that John’s height is six feet precisely provides an idealization that, in suitable situations, **FUNCTIONS** as a truth. Acting on the assumption that people do have precise heights and that John’s height is six feet does no harm when the discrepancy between six feet and John’s actual height properties doesn’t matter for current concerns. I will say that in such situations the statement’s **CONDITIONS OF APPLICATION** obtain.

However, one might think that from the beginning it would have made more sense to interpret the statement that John’s height is six feet as

John’s height is six feet **CLOSE ENOUGH**.

You see the analogy to the map example. This statement is imprecise, but as in the case of the second map, in suitable circumstances it doesn’t do any misrepresentation.

In which circumstances? Exactly the conditions of application of the precise analogue statement, the conditions in which the precise version functions as a truth. In such circumstances the imprecise version does not actively

misrepresent. The inaccuracy of the first version has been swept under the rug of the imprecision of the second. And with no defect of misrepresentation the second version counts as true.

The two statements, *John's height is six feet precisely*, and *John's height is six feet close enough*, get the same representational work done, but in different ways. When the conditions of application obtain, the first statement, though inaccurate, functions as a truth; while the second statement commits no sin of inaccuracy and so counts as true. I call such pairs of statements 'semantic alter-egos'.

I need to make two comments about the idea of conditions of application. 'Conditions of application' could be heard as referring to the conditions in which one is rationally warranted in asserting the statement, as conditions of warranted assertability.⁴ I intend the alternative reading, the conditions under which the statement in fact applies, applies whether or not rational assertion is mistaken.

Second, some may worry that these conditions of application are just the traditional contextually augmented truth conditions. The problem is supposed to be that once one fills in what the context requires for functioning as a truth, what specific things will satisfy one's needs and interests, this fill-in provides all the truth conditions as traditionally understood.

Not so. First of all, this would require that human desires are themselves completely determinate, which I deny. Consider a sequence of ice cream samples starting with chocolate, and progressively having less and less chocolate flavouring. At what point will the ice cream no longer satisfy your craving for CHOCOLATE ice cream? I suppose we could try to quantify how well ones desires are satisfied, but human variability and just plain fickleness won't allow complete precision of any such measure.

Secondly, Braun and Sider's reasons apply. Let me amplify. At a low enough level, application of language to the world will work in terms of some complex physiological mechanism. Let's suppose that the mechanism itself is completely determinate. And if completely determinate, in every case it will yield a yea or nay for each possible candidate for a predicate's extension. But at the finest margins the accidents of the details of the working of any such mechanism will be arbitrary and will vary arbitrarily even from moment to moment. No such mechanism counts as executing a completely determinate set of truth conditions.

Some will have a more general worry. I say that the imprecise alter-ego is true when it does not in any way misrepresent, and that it is free of misrepresentation when the precise alter-ego functions as a truth. But if there is any failure of determinateness as to whether the precise version functions as a truth, we are right back where started. And considerations about fuzzy

4 Called to my attention by Peter Ludlow.

margins of application surely apply to functioning as a truth as much as they do anywhere.

Yes, the model does not tell us *precisely* what truth is, more carefully, exactly what kind of thing one has done when one positively evaluates a statement for representational success. Neither does chemistry, when it tells us that water is H_2O , tell us *precisely* what water is: at what pressures and temperatures do collections of H_2O molecules count as water? And how many H_2O molecules need one have to have some water? Neither model tells us precisely what their target is; but they tell us a lot nonetheless.

Still, am I not using imprecise representation, that is, just what I claim to be explicating – or modelling? Yes. I am using language and other forms of representation to model how we get by despite imprecision. Since all forms of representation are imprecise, nothing better is possible. So I call on the cut to the chase principle. I USE imprecise representations when I don't just mention, but illuminate how we get by with representations despite their imprecision. Again, nothing better is possible.

This is a good place for a side remark. There is a long tradition, going back at least to Waismann, and today much discussed in philosophy of law⁵ about the so-called 'open texture' of language and how this open texture facilitates the use of language. The model of semantic alter-egos might be seen as a way of making some of those ideas more (but, per the last two paragraphs, not completely) precise.

The model I am developing applies well enough to our first simple case of John's height being described as six feet. But people object: many cases are just plain true so that there is no need to rough things up with imprecision, ones for which there is no need for relativization to current concerns. Here is an example that will stand in generally for this kind of case. We've measured John's height with the sewing drawer tape measure and come up with six feet, close as we can tell. Now consider:

John's height is between three and nine feet.

Don't we here have an unproblematic truth, showing that Braun and Sider are wrong? Braun and Sider are going to say⁶ that there is still imprecision in 'height', 'feet' and, for that matter, 'John'. So no determinate proposition has been picked out. So there is nothing that has been picked out that could be true (or false).

Seeing such cases through my philosopher of science eyes I want to put things a little differently, though in a way that I think still has a lot in common with Braun and Sider. In science we do have many truths, such as the statement that water is H_2O ; but, as mentioned above, such truths are imprecise. Such statements are fairly characterized as true, but truths that are

5 The discussion stems from Hart's (1961) treatment.

6 Braun, in correspondence.

still compromised by their imprecision. In other words, their truth is purchased with the device of semantic alter-egos applied to models that are more precise, but not completely accurate. When we go very precise, as often in physics, we always get idealized models that are, in one way or another, representationally defective with respect to accuracy. But they succeed in telling us about the world, in Cartwright's terminology, by providing a simulacrum, (1983: 143–62) or in Giere's phrasing, by being similar to the world in respects of interest to a degree of accuracy that satisfies (1985: 62–91).

Think of statements such as that John's height is between three and nine feet, that there are some people in this room, and the like, as little models. We model the world with idealized notions of heights, people, rooms. Within these models such statements are true, period. But there is still the matter of applying the little models to the world, and this is never a completely precise matter. I have pointed out that there is indeterminacy in the notion of a person's height, and similarly indeterminacy in the notion of a person, as problems (among others) about the start and end of life show. *Heights, people, rooms* full stop, are idealizations.⁷ On this modelling approach we use such idealizations to put together models, big and small, that work well enough for us, that, in many fortunate cases, function as accurate guides to an independently operating world.

When physicists study water they use different, incompatible models. The idealized hydrodynamics of continuous fluids tells us a lot about the fluid properties of water. The idealized statistical mechanics of thermally moving discrete particles tells us a lot about diffusion, electrolysis, osmosis and many other things. In studying language we also need a variety of modelling techniques for various facets of linguistic experience. The familiar precise semantic values model works marvellously for understanding linguistic structure. But its idealization of precise semantic values undermines understanding of what is involved in applying language to the world. For this latter concern we see the subject matter more clearly (though not perfectly precisely, and, no doubt also in other respects imperfectly) by applying the modelling technique of semantic alter egos.

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7 Peter Ludlow (unpublished manuscript) insists that they are not idealizations but (our conceptions of such things) are unproblematically indeterminate notions. The principle of semantic alter egos tells us that these are really just two sides of the same coin. We can describe the situation in terms of models formulated with notions that are thought of as completely precise, but where indeterminacy arises in application of the models to the world, or, equivalently, we can read the indeterminacy back into the notions themselves.

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No-no. Paradox and consistency

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1. A critique of the Sorensenian solution to the no-no paradox

Classical logic and naive truth – roughly, the unrestricted equivalence between ‘*P*’ and ‘‘*P*’’ is true’ – are a cocktail for disaster. Sometimes the disaster consists in the derivation of a straightforward *contradiction* (as happens in a standard Liar paradox). Some other times, however, it consists instead in the derivation of a conclusion which, *while formally consistent, is clearly unwarranted*, lying beyond the bounds of what one can rationally infer when one reasons about truth (as happens in a version of Curry’s paradox with the conditional:

(C) If (C) is true, Italy will win the next World Cup,

using which one can derive, by classical logic and naive truth alone, that Italy will win the next World Cup!).¹ It is in this vein that we wrote that a *paradox*

1 Throughout, we understand the conditional to be material. Armour-Garb and Woodbridge 2010: 13, a paper which we’ll discuss in greater detail in §§2 and 3, put forth the principle:

(DT) If the only consistent truth-value assignment for a given sentence token, *S*, assigns it truth (falsity), then that will be the correct truth-value assignment for *S*. A discussion of the (dubious) philosophical merits of (DT) is rendered unnecessary by its disastrous consequences as applied to (C) and its like. For notice that the assignment of falsity to (C) is inconsistent, as, by classical logic and naive truth, the falsity of (C) entails the falsity of its antecedent and so (C)’s truth. The assignment of truth to (C) is, on the contrary, consistent, even given the full joint power of classical logic and naive truth. Hence, (DT) disastrously implies that (C) is true, and so, by classical logic and naive truth, that Italy will win the next World Cup. (Armour-Garb and Woodbridge 2010: 13–14 further claim that (DT) has the consequence that the Truth Teller is either true or false. This is certainly mistaken, as the antecedent of (DT) is only triggered by the fact that *only one* truth-value assignment is consistent, which is