

# Remarks on “Having an Interpretation”

Simone Testino

December 2023

## Abstract

I divide the document into two sections, the first where I argue against some theses present in the article, in particular: relevance of the *reference fixing question*, the *social theory of reference* and the missing reference of unobservables in *empirical structuralism*. The second section contains a brief exposition of consequences in philosophy of logic which I see to follow directly from ontological structuralism but to which I did not find any reference yet.

## 1 Role of the “Social Language”

With “social language” I mean that language whose reference is investigated in the *reference fixing question*. From the end of p. 253:

Now this [pragmatic tautologies] may answer the question under what circumstances our predicates have the right extensions (namely when they belong to our language). But they scarcely answer the question how a child, say, succeeds in establishing reference by learning a first language or how we, as a society, have managed to establish reference by developing a language. This is what I call the reference fixing question. That we have established reference is not at issue here, nor is it questioned whether we have accorded our predicates the right extension: the question is how we have managed to do it. This is a substantial question. It is of philosophical importance and relevance, and has been taken as such in the philosophy of language.

What I fail to understand in these pages is which role exactly the social language plays in this debate. This has been exposed at least twice, in p. 454:

In particular, one might ask (van Fraassen 1997a, p. 36):

Under what circumstances do [our predicates] have, or acquire, the right extensions?

[...] The reference question as I understand it was hinted at (but not quite expressed) in the quote above by the use of the word ‘acquire’.

And immediately afterwards:

Van Fraassen comes close to what I call the reference fixing question when he writes (van Fraassen 1997a, p. 38):

Trying to complete an interpretation of my language as a whole, in some independent, informative, non-tautological way, can only reduce us to absurdity. For interpreting is an activity involving use of and reliance on my own language and inconceivable without it.

Now I have agreed with van Fraassen that we cannot, on pain of paradox, fully articulate our interpretation of our language in our language. But we somehow have, as individuals and as a society, ‘completed’ an interpretation of our language as a whole in the sense of having succeeded in getting the sounds and scribbles that we produce to refer.

I see where the first quote by van Fraassen seems to point to the reference fixing question, though I fail to see how he refers to it in this last quote, in which van Fraassen seems to come to the expected conclusion of the model theoretic argument: given the assumptions, we cannot find an interpretation of our language, our statements are semantically indeterminate. He does not mention anything on “how a child, say, succeeds in establishing reference by learning a first language or how we, as a society, have managed to establish reference by developing a language” (ibid.), on the other hand I see the comparison with the scepticism of this conclusion with the undeniable evidence that we “succeeded in getting the sounds and scribbles that we produce to refer”.

Is this actually an undeniable evidence though? More precisely, does this evidence show that we succeeded in something actually related to what *philosophical reference* is? A suspect that there might be some sort of discrepancy was admitted and defended, in particular:

It [the reference fixing question] is of philosophical importance and relevance, and has been taken as such in the philosophy of language. This is not to say that the reference fixing question may not be [t]so some or even considerable extent an empirical one: there is no need to distinguish sharply between philosophical questions and empirical questions.

Consider that this *methodological assumption*, that philosophical and empirical questions are to be mixed together, is very much decisive in the question on which role, if any, the reference fixing question (or the social language) shall play in this debate. And the need itself to express so explicitly that this assumption has been made, implicitly shows that it is *not obvious* in a philosophical debate. On one hand note that, if that were not the case, i.e. if one were to conclude that philosophical questions are to be answered a priori or through some “non-falsifiable common knowledge” (of the same sort of knowledge that drives us to define “belief”, “I”, “knowledge” in some specific ways), then answering to the philosophical reference question through the reference fixing question would be a methodological mistake. On the other hand, one could state that no philosophical answer to the reference question has been found and therefore the only hope lies in the sciences, this is what I would call a confined and sceptical form of *naturalism*<sup>1</sup>.

I take the rest of the section not to discuss the *methodological assumption* in general, but focusing on its instance in this debate. I first present a trivial solution that one who makes the assumption should be happy with, and have then no further doubts on what our language denotes. I show afterwards why this solution is not desirable to a philosopher denying the methodological assumption and to whom the sceptical and naturalistic conclusion should be the very last one. In the second subsection I discuss whether the causal theory of reference is, as claimed, an answer of the same sort as the social explanation. Lastly, I discuss the issue presented with the van Fraassen structuralism, claiming that unobservables are treated fairly in the van Fraassen view.

## 1.1 Pragmatic Tautologies

Pragmatic tautologies clearly fail in giving any sort of informative interpretation of the language, in fact they do not attempt to reach any metaphysical or non-linguistic entity and hence result to be trivialities of little use in the aim of understanding what the reference of a word is.

On the other hand, once affirmed that the social language shall be considered in the philosophical discourse and noticed that its reference, for some obscure reasons (that the reference fixing question tries to explain), has been fixed, (and since we have epistemic access to the social language) why not simply conclude that “blue” denotes what *we denote with “blue”* (where the first is an element of my language and the second of the social language).

This very trivial result, should now sound acceptable for who makes the methodological assumption, since the fact that now the reference of our language is not to be philosophically established but empirically (through some investigations either vague or experimental on what the denotation and meaning of the social language actually are) should not irritate.

---

<sup>1</sup>What I mean here with this *confined naturalism* is the choice to give up any hope to find an a priori answer to the question and instead hope that, if any, an answer will come from the sciences. An example may help: I may intuitively see no way to talk in a precise, a priori and internalistic way about consciousness and therefore argue that consciousness is not a term that I want in my *philosophical vocabulary* and which therefore shall be investigated by scientists instead of philosophers; in this example I would be a naturalist about consciousness. I also call this a *sceptical conclusion* because it is to give up the hope that there is anything philosophically to be said about the topic and this, if the methodological assumption is denied, also concludes the philosopher’s work in that field. This may well not be too close to the actual naturalism, I am sorry if stealing this word creates confusion.

I would, as it seems to me to be agreed, refuse this solution. I refuse this for the simple reason that “social language” is not something that I can imagine to be investigated through any philosophical tool. On the contrary, if I were to think that there is no better solution than this one, I would have given up already the hopes to answer philosophically to this question and leave the job to people in other (experimental) departments who will have a better competence than mine in coming to some acceptable answers.

## 1.2 *Social or Causal Theory of Reference?*

First consider the following passage from p. 455:

it seems to me that the new theory of reference does not have to be spelled out using metaphysical notions (such as ‘natural property’, ‘causality’). So it is unfortunate indeed that it is called ‘the causal theory of reference’—it would have been better to call it the social theory of reference. Kripke and Putnam have done no more and no less than to sketch how we, in our social and linguistic practice, fix the reference of certain terms. This can and should be done without wheeling in metaphysical machinery: it isn’t needed and it isn’t wanted.

I believe the wheeling in the metaphysical machinery is indeed needed and wanted. Before arguing for this, let me underline that there are at least two versions of the methodological assumptions one may go for: the weak one only assumes that we may sometimes use some empirical results in the philosophical debate (e.g. physics aid in metaphysical questions) and the strong one assumes that any philosophical result is of the very same type as an empirical one. I see this quote as an instance of this *strong methodological assumption*, this is though an assumption, I claim, that causal theory of reference does not usually make.

Given some real and metaphysical relation of causality, the causal theory of reference attempts to point at some metaphysical object as the reference of a given word. This theory does not want to have “society” in its vocabulary because that is a very complex word that leaves me personally with no hope of describing it with any sort of philosophical precision. On the other hand, even though a real metaphysical causality (assumed existing) also brings some difficulties, though it is seen as a word whose definition we may hope to state precisely one day (if believed existing).

The reference fixing question has been touched, I believe, by Donnellan<sup>2</sup> when he writes:

Thus, in an early example, the parents of a child ask, ‘Who would he say was a nice man at a party of ours?’ when the child has said, ‘Tom was a nice man?’ How we answer such questions I do not have a general theory about. It seems clear to me that in some way the referent must be historically, or, we might say, causally connected to the speech act. But I do not see my way clear to saying exactly how in general that connection goes. Perhaps there is no exact theory.

“Perhaps there is no exact theory.” and if there is none, that is it, the philosophical discourse is concluded. I conclude this subsection remarking that I believe the causal theory, as much as the natural property theory or any other sort of theory of reference that involves the “wheeling in the metaphysical machinery” is well conscious of doing so and does it for assuming the negation of the described strong methodological assumption. The “wheeling in the metaphysical machinery” enables the philosopher to state arguments in an exact way that a social conception would not do.

## 1.3 *Need of a New Structuralism*

To begin, structuralism by van Fraassen is presented at p. 457:

Van Fraassen advocates an empirical brand of structuralism, the core of which can be depicted as follows (van Fraassen 2008, p. 238):

Essential to an empiricist structuralism is the following core construal of the slogan that *all we know is structure*:

---

<sup>2</sup>Donnellan, K. S. (1970), Proper Names and Identifying Descriptions. *Synthese*, 21(3/4), 335–358

- I. Science represents the empirical phenomena as embeddable in certain *abstract structures* (theoretical models).
- II. Those abstract structures are described only up to structural isomorphism.

Immediately after the issue concerning unobservables comes:

I find that something is missing here. It suggests that science speaks only about the empirical world and how it can be embedded in a mathematical framework. An empirical structuralism should hold open the possibility that science makes true existence claims about non-observable but concrete entities.

I share the same intuition on why empirical structuralism should “hold open the possibility that science makes true existence claims about non-observable but concrete entities”, though it seems that this need is already fulfilled by the exposed theory. Consider the following passage from the [SEP entry](#) on Structural Realism:

Bas van Fraassen (1980) revitalised the debate about scientific realism by proposing his constructive empiricism as an alternative. His antirealism is sceptical rather than dogmatic, and does not depend on the distinction between theoretical and observational terms. He allows that terms such as “sub-atomic particle” and “particle too small to see” are perfectly meaningful and should be taken literally (the former term is theoretical and the latter term is not but both purportedly refer to unobservable entities).

When claiming structuralism to make “true existence claims about non-observable but concrete entities” one is not meaning the unobservable to be an object properly, but instead an *equivalence class*, hence defined “only up to structural isomorphism”<sup>3</sup>. Consider now the proposal and its counter-argument:

Van Fraassen could add that our scientific theories successfully refer to unobservable entities if and only if at least one of its models is isomorphic to the unobservable structures of the natural world. But then not enough has been said. Suppose the unobservable structure of one of the models of our scientific theory corresponds to the unobservable structure of the world. How do we manage to single out this model that luckily corresponds, as far as the unobservable is concerned, to the world? How have we managed to intend this model instead of another or many other of the myriad models that our best scientific theory has? Again, it would be a mistake to think that considerations about theory satisfaction can solve this problem; only close attention to scientific practice can hold the key to a satisfactory answer.

If atoms are actually needed as unobservable entities in our scientific theory, they will be present way more often than in one lucky model. In fact if atoms are to be taken seriously in the scientific discourse, I expect them not only to appear in one possible interpretation of the theory, but instead in most (if not all) of them. If that were not the case, and we happen to find an interpretation of the scientific theory without atoms, then we may well reconsider if, after all, atoms are that real (taking into account perhaps what those atom-free structures have to offer, though reasoning at the model-level becomes arbitrary and one shall do better, I believe, in considering the scientific theory alone).

If, on the other hand, one would happen to have in the hands the only structure (up to isomorphism) that exactly “corresponds to the unobservable structure of the world”, it is no surprise that we cannot single it out, what would we need scientists for then? In fact, if we could single out that model, and hence (I suppose this is meant with “single out”) have epistemic access to it, we would not only access to all observable entities of the world but to its underlying unobservable structure too!

To state more explicitly how I would handle the unobservable debate related to the van Fraassen’s theory, consider the following: “our scientific theories successfully refer to unobservable entities if and

---

<sup>3</sup>Note that (non-)observable entities are said to be existing in the structure of the world not properly as objects but as *equivalence classes* only. From a scientific realist standpoint, say  $a$  is an unobservable entity, an atom for instance. In the structuralist standpoint, we are allowed to talk about it only up to isomorphism, hence consider, for  $\mathfrak{A}$  a structure of the scientific theory,  $\mathfrak{A}_1, \mathfrak{A}_2, \dots$  isomorphic structure to  $\mathfrak{A}$  and  $\varphi_1^1, \varphi_1^2, \dots$  isomorphisms from  $\mathfrak{A}$  to  $\mathfrak{A}_1$ , then  $\bar{a} := \{x : \exists_i \exists_j \varphi_i^j(x) = a\}$  (this definition ranges of the index sets of the quantifiers which should be clarified, though it should here not cause any worry). Then, a structuralist should make claims on  $\bar{a}$  only, existence claims too.

only if” *all models* of our scientific theory are models of that entity. And this is the case for observables too, we can successfully refer to oceans because there are oceans in all models of our scientific theory. One may argue that asking something to hold for *all models* is too strict, in fact that object would be basically part of the theory already (a logical consequence at least). Consider again the example with atoms, if we had a model of the scientific theory without atoms, does it mean that we cannot refer to atoms anymore? Well, at least we cannot be sure of their existence to the same extent that we are for oceans, because at the end, it might be the case that the atom-free model is the lucky one.

The problem in principle that I had while understanding the quoted paragraph is that, given the empirical structuralism framework, I cannot fairly distinguish observables from unobservables. I suppose oceans are observables because I saw them, or at least, I could. On the other hand, I cannot see atoms, right? A couple of years ago my father, who is a chemist, showed me results of an experiment in photos made by some complex microscope I cannot recall the name of, and told me that those little dots forming geometrical shapes, were in fact atoms! So I did see atoms. Not with my bare eyes though, so perhaps they are unobservables. My father wears glasses, is it all the world made by unobservables to him? What I am aiming at is that defining unobservables as those things that I can (or could have) perceived, is certainly very fuzzy, there are no such things as “observables” but just things more or less observables.

One could attempt here another definition: claiming existence of observables requires *no use of logic*. Once I see the ocean I can directly claim “here is the ocean, it exists!”. A dialogue with Prof. Horsten on Kantian perception though, convinced me that perception comes with some bare understanding, some sort of *awareness*, if I got the concept from philosophy of mind correctly. Perceiving the ocean therefore would have within itself some sort of understanding which would made the set of those perception requiring no use of logic just empty.

## 2 Tarski and Structuralism

Given one statement on the world, if we are willing to check its truth value through the truth definition by Tarski, we need consider all those models of the theory in the same language of that statement. Hence, if the statement was about the world, there is the need of having a structure of the world. As far as I have understood, this is the main motivation behind bringing structuralism in the discussion on the interpretation of the world.

Now, say that one is willing to accept structuralism in order to use the very convenient Tarskian truth definition, I see some apparently immediate conclusions that one should accept too and which I didn’t find mentioned in the [SEP entry](#) or other sources came across.

### 2.1 Platonism and Monism

It seems to me that the Tarskian definition of logicity<sup>4</sup> as well as the Tarskian theory of truth<sup>5</sup> make sense only once world(s) are considered a structure. Else, how is “preservation under automorphisms” to be understood in order to define logical notions? And similarly, how should we range over models of a theory of the world, if the world itself does not allow existence of such models? Once assumed that the metaphysical world(s) is isomorphic to a structure, I believe that Logical Monism and Platonism on logical constants must follow directly, since these constants have a fixed interpretation in the world. For more accuracy, consider the following argument.

For an isomorphism  $\varphi$  of the sort assumed by ontological structuralism (or an automorphism if  $W$  is to be seen as sort of “metaphysical structure” instead of a metaphysical world isomorphic to a mathematical structure) and  $I_{\mathfrak{A}}$  an interpretation of a signature  $\Sigma$  into a structure  $\mathfrak{A}$ , consider the following commuting diagram:

$$\begin{array}{ccc}
 & W & \\
 \psi \nearrow & & \nwarrow \varphi \\
 \Sigma & \xrightarrow{I_{\mathfrak{A}}} & \mathfrak{A}
 \end{array}$$

Then  $\psi = I_{\mathfrak{A}} \circ \varphi$  is an interpretation of the signature into the world. Now consider the relation “ $\wedge$ ”, since, as everyone agrees, this symbol of  $\Sigma$  denotes *always* conjunction, it is a logical constant and

<sup>4</sup>Tarski, A. (1986), *What are logical notions?*

<sup>5</sup>Tarski, A. (1936) *On the Concept of Logical Consequence*

should therefore have a fixed interpretation in  $\mathfrak{A}$ , call it  $\wedge^{\mathfrak{A}}$  and say  $\varphi(\wedge^{\mathfrak{A}}) = \wedge^W$ . No matter which interpretation  $I_{\mathfrak{A}}$  or which other structure  $\mathfrak{B}$  we take,  $\wedge^{\mathfrak{A}} = \wedge^{\mathfrak{B}}$ . Therefore, no matter what,  $\wedge^W$  is constant, in this way, not only the meaning of “ $\wedge$ ” is fixed, but it has a fixed reference too. For a subset  $\sigma \subseteq \Sigma$  of logical constants,  $\mathfrak{s} := I_{\mathfrak{A}}(\sigma)$  for a structure  $\mathfrak{A}$ , then  $\mathfrak{s} = I_{\mathfrak{B}}(\sigma)$  for any structure  $\mathfrak{B}$  and hence  $\varphi(\mathfrak{s}) \subseteq W$  for any world  $W$ .

On one hand conclude that the platonic realm of ideas would then exactly be  $\varphi(\mathfrak{s})$ , which is a subset of the world, real as any other subsets (like relations, properties and functions describing the ocean); on the other hand conclude that, since not only the semantics, but even reference of logical constants has been fixed, those must be the only *one* set of interpreted symbols that can be called a “logic” (by Tarskian definition), since any other symbol would have a varying interpretation and therefore be as logical as any empirical statement.