Eternal Truth by Convention

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Within the epistemology of the sciences, conventionalism has been the subject of regular criticism for over six decades. Critics such as W. V. Quine and Morton White, and more recently Nathan Salmon (1992), and Paul Boghossian (1996), have attacked even the most basic tenet of conventionalism, namely its claim that the truth of certain statements is fixed not by stipulation-independent facts, but by the conventions governing the meaning of those statements and their constituents.

One such criticism has been recently leveled by Boghossian, who argues that the conventionalist is in trouble when confronted with the truism that, "for any statement *S*, *S* is true iff for some *p*, *S* means that *p* and *p*." After all, Boghossian argues, "How could the *mere* fact that *S* means that *p* make it the case that *S* is true? Doesn't it also have to be the case that *p*?" (Boghossian 196, 365). The conventionalist will presumably answer by saying that *p* is the case in virtue of our meaning *p* by *S*. But then, Boghossian says, conventionalism looks seriously implausible, for it now seems that

> the *truth of what the sentence expresses* depends on the fact that it is expressed by that sentence, so that we can say that what is expressed wouldn't have been true at all had it not been for the fact that it is expressed by that sentence. Are we really to suppose that, prior to our stipulating a meaning for the sentence
>
> Either snow is white or it isn't
>
> it wasn't the case that either snow was white or it wasn't? (Boghossian 1996, 365)

Boghossian's argument requires a bit of refinement. The conventionalist does not need to assert that *if* there had been no stipulations granting *S* a meaning, then not-*p*. Rather, she requires only a conditional of the form: *if* there had been no stipulations granting *S* a meaning, then *S* would be meaningless, and so would not mean that *p*. But even so, Boghossian is surely justified in pointing out that if a conventionalist thinks that geometrical axioms (see Poincaré 1952), spatial metrics (Schlick, 1985), or even physical laws (Carnap, 1937), are consequences of stipulations made at some particular time, then they ought to have some explanation of why those things appear to be true for all time.

I wish to argue that Boghossian's objection is answerable from within a broadly conventionalist framework. My case will rest in part on an argument suggested by Wittgenstein, and it is consistent with the broadly conventionalist epistemology of science that appears in Poincaré, Schlick, and Carnap. Such a conventionalist epistemology maintains that at least some statements of a scientific theory, such as geometrical, metrical, logical, or mathematical principles, and possibly also physical laws, are themselves either explicitly or implicitly the expressions of linguistic rules, or the consequences of the adoption of linguistic rules. As expressions of linguistic rules, the conventional elements of a theory are held to be partially or wholly constitutive of the meaning of some of the theoretical terms that appear in them, such as "straight line", "simultaneous", "logical consequence", or "iron" (see for instance Carnap 1937, 180 and *passim*).

Conventionalists differ about what types of statements are conventions, with some conventionalists, such as Poincaré, restricting conventions to the geometrical and metrical principles of a physical theory (see Poincaré, 1952), while others, like Carnap, count even logical and physical laws among the possible conventions of a scientific theory. Conventionalists like Carnap recognize important differences among the types and scope of conventions, as with Carnap's distinction between P-rules and L-rules (Carnap 1937, 184). For my purposes, however, these distinctions are not important. What is important is that at least some of the physical principles that are claimed to be conventional appear to be timelessly true, in the sense that we expect them to be true at every time in the past, present, and future. So my reference to "physical principles" in this context is intended to be very broad and to encompass those statements of a physical theory, including geometrical, mathematical, and logical statements, which appear to be timelessly true. The conventionalist epistemologies of science in Poincaré, early Schlick, and Carnap all include at least some such statements, whether from geometry (Poincaré 1952, 150f.), mathematics (Schlick, 1985, 31f.), or geometry, mathematics, logic, and physical science (*cf.* Carnap, 1937, 51 and *passim*). As such, Boghossian's objection that conventionalism wrongly implies that statements like "Either snow is white or it isn't" are not timelessly true applies in *some* form to all three philosophers, even if Boghossian's particular example (of a consequence of the law of the excluded middle) would not be relevant for a conventionalist like Poincaré.

The conventionalist response to Boghossian that I propose is motivated by looking at the role of temporal predicates and certain counterfactual expressions as they function in the context of remarks concerning statements of physical principles. In cases where *S* is an expression held to be timelessly true, statements having a form like:

> (a) Prior to a stipulation of the meaning for *S*, the fact *p* that *S* expresses was still a fact.

or,

> (b) Even if no one had ever stipulated a meaning for *S*, fact *p* that *S* expresses would still have obtained.

evoke our assent, while statements having a form like:

> (c) Fact *p* that is expressed by *S* came into existence at precisely the moment that the meaning of *S* was stipulated.

seem ridiculous. This reaction lends support to the idea that certain facts expressed by statements of physical principle are reports of eternal and convention independent facts, as Boghossian thinks.

However, I believe that our reaction to statements of these forms is instead an expression of the fact that temporal expressions have no conventionally defined function within the context of talk about statements of (at least some) physical principles. That is, I propose that temporal statements like "before," "after," "when," "ever," and "always" have no rule-defined application to expressions of some physical principles. Thus expressions of physical principles or their consequences such as: "Either

snow is white or it isn't," "The shortest distance between two points is an arc," or "The coefficient of thermic expansion for iron is 0.000012 (in the appropriate units)", are simply outside of the conceptual system of temporal expressions. As such, they do not describe any event, and so *a fortiori* they describe no event of infinite duration. Our rejection of the attribution of finite duration to the truth of certain physical principles is therefore more akin to our rejection of category mistakes, such as the ascription of color predicates to *abstracta* like thinking or freedom, than it is akin to our rejection of particular historical claims that we know to be false.

Thus, to say that the fact expressed by a statement like "Either snow is white or it isn't" is true *prior* to our stipulating a meaning for this statement is simply a slightly confusing way of saying that *no sense* has been defined for a statement like: "The statement 'Either snow is white or it isn't' became true at time *t*". Our recognition of the senselessness of such sentences is expressed by our assenting to statements with a form like (a) and (b) above. But we so assent not because we have identified some fact that is timelessly true, but rather because we implicitly realize that no rules have been laid down which license an application of expressions like "became true on... ", or "ceased to be true when ..." to certain statements of physical principles.

The sense in which physical principles may be timelessly true is thus a conceptual one, not a metaphysical one. This position is wholly consonant with that aspect of conventionalism which emphasizes that a part of what the stipulations of the conventions of a physical theory are doing is specifying a descriptive apparatus *in terms of which* descriptions of facts have a sense in the first place. Critics of conventionalism have tended to focus upon the arguments, prominent in Poincaré and Duhem, that conventionalism is required by the under-determination of physical or geometrical theories by empirical observation. But there is another, independent justification for conventionalism in the observation that that any description of the empirical world presupposes a suitable descriptive language, such as a geometry, a metric, or a mathematics, and that in many cases there is no issue of offering a justification for that descriptive language, for the simple reason that the descriptive language is a *precondition* of justification (see for instance Schlick 1985, 337f. I think this is also the upshot of Carnap's attempt to dismiss foundational questions in his 1937, 277ff). My claim that temporal predicates have not been defined over physical principles thus fits nicely with this aspect of conventionalism.

Yet this claim is likely to appear to some to be seriously *ad hoc* nonetheless. Why, after all, do we have the conventions governing temporal expressions that we do? It might well seem that we have the rules governing temporal expressions that we do *because* it is a fact that some physical principles answer to eternal, language-independent facts. If the timelessness of the truth of certain physical principles is *just* a matter of convention, why couldn't we simply change our conventions such that tomorrow it will be false that snow is white or it isn't? Boghossian raises a similar worry by asking: isn't it "the world" or "the facts" that generate the truth of any given class of statements? (1996, 365)

The basic objection here is that we have the conventional rules that we do *because* the world is a certain way. That is, matters of non-conventional fact determine the range of admissible conventions. If this weren't true, the objection continues, then since conventions are just stipulated, nothing prevents the stipulation of intuitively implausible alternatives. The end result appears to be relativism about even the most basic physical principles. However, I think that such relativism can be avoided, and that an under-appreciated argument of Wittgenstein's blocks this relativism objection rather nicely.

In the *Philosophical Remarks*, Wittgenstein wrote:

> If I could describe the point of grammatical conventions by saying they are made necessary by certain properties of the colors (say), then that would make the conventions superfluous, since in that case I would be able to say precisely that which the conventions exclude my saying. (Wittgenstein 1975, 53)

Someone who thinks that linguistic conventions have a justification in non-conventional matters of fact will suppose that a convention about colors is ultimately justified by the relevant facts. Here Wittgenstein is giving a counterargument to this supposition.

I take his argument to work as follows. Suppose one tries to say that *because* of the language independent fact that no two colors can be predicated of the same point in space at the same time (for example), our language, by means of conventions in the form of linguistic rules, stipulates that at a single a time a particular point can be called "red" only if it cannot also be called "green." One thus attempts to justify the rule by reference to a certain *description* of reality. But then the intelligibility of the description is presupposed by the rule-governed linguistic conventions which that description is supposed to be justifying. In other words, as Wittgenstein put it later,

> if something can be said in the justification and is permitted by its grammar -- why shouldn't it also be permitted by the grammar that I am trying to justify? Why shouldn't both forms of expression have the same freedom? And how could what the one says restrict what the other has to say? (Wittgenstein 1978, 186)

If the justification cited as the ground for the claim that the conventions follow from the facts is intelligible, then, *ex hypothesi,* the statement of the justification accords with such conventions. But then there must already be a descriptive language in terms of which we frame our justifications for the constitutive rules of descriptive language. In which case both the conventions *and* their justification are superfluous; if we can already say what we need to in order to justify the conventions, we don't need either the justification or the conventions.

Wittgenstein can thus be read here as challenging the coherence of the supposition that there could be a justification for the conventions constitutive of a system of physical theory that appealed to facts described by *using* the conventions of that theory. Rather, the conventions that stipulate the meanings of certain physical concepts should not be regarded as themselves answerable to reports of facts involving those concepts.

If this line of response to the relativism worry is accepted, then I submit that the attempt to defend the timeless truth of certain physical principles by an appeal to the allegedly convention-independent fact that what those principles state is eternally true falls victim to this same circular reasoning. It is only *given* the conventions governing "not" and "or" that the sentence "Snow is white or it isn't" is an "eternal truth". Adducing the fact that snow is white or it isn't as a *justification* for the meaning-constitutive conventions governing "not" and "or" illicitly uses a description of the allegedly justifying fact. The use is illicit since the required description is only intelligible in terms of the convention itself, and hence presupposes it. All of which exposes an incoherency in attempting to justify conventions in terms of facts in the way that the relativism objection assumes can be done. Conventionalism, I submit, has nothing to fear from the fact that certain truths are timeless, because this fact is itself a point about the use of language.

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