

Wittgenstein's *Philosophical Investigations*
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Lecture XI: The "scientific objection"

Wittgenstein's attitude towards science is illustrated by an anecdote (perhaps apocryphal). A child having learned that the earth is round, asks, "Why don't the Australians fall off?" A scientific answer will talk about gravity, which keeps people on the earth. Wittgenstein, in the anecdote, was said to dismiss these sorts of explanations, and to replace them with the following: he draws a picture of the earth with British people on top and Australians on bottom, inverts it, and says, "Now *we* fall into space." To me it is clear that this story does not manifest an anti-scientific stance, but rather Wittgenstein's anti-scientism. Wittgenstein's response to the child addresses a conceptual confusion that underlies the question, and the scientific response does not. The child would likely come away from the latter thinking that Australians had something special about them (gravity shoes, perhaps) that kept them attached; while the British, on top of the world, did not need them. Wittgenstein's ploy addresses the presuppositions here. This is not an explanation that competes with gravity; rather, the problem concerns what we think the question being asked is, at that juncture. Wittgenstein's response gets to the heart of the conceptual confusion.. After the confusion is cleared up, of course, explanations invoking gravity are in order, if needed.

Now we are looking at an objection to Wittgenstein's "no-process" view (i.e. that there is no such *thing* as understanding) that claims to start from a scientific viewpoint. According to this objection, it is up to science (especially neurobiology) to tell us whether understanding is a particular, definite process, or not. Surely it is at least conceivable that future empirical research will discover states or processes of understanding, meaning, intending, remembering, etc. There's nothing that precludes the possibility that we will find "understanding neurons." And if that is so, then all that Wittgenstein is doing in urging this "no-process" view is betting on the future course of science. He's doing a kind of a priori anti-science: a bet on the failure of certain empirical hypotheses. That's the objection.

One thing that Wittgenstein does in the sections on understanding, is to liken understanding to an ability, rather than a state or process. So we have in §150 a place where this comes out: "The grammar of the word 'knows' is evidently closely

related to that of 'can', 'is able to'. But also closely related to that of 'understands'. ('Mastery' of a technique.)" That's a grammatical point.

Now, one might claim that that's enough to fend off the "scientific objection", since it doesn't make sense to claim that a particular neural state is identical to an ability. That's fair enough. The problem is that the objector may claim there is still the question of the underlying structure in virtue of which one has the ability, and that is close enough to being "the understanding itself". I think Wittgenstein wants to block this as well, since there is still an "it" being sought, that in some sense (perhaps, an empirical sense) *constitutes* the understanding.

This is not to say that the analogy of understanding to an ability is unhelpful. It certainly does sound odd to say that there might be a particular neural state that is the structure in virtue of which I have the ability to whistle the first ten bars of *Eine Kleine Nachtmusik*. There are too many disparate things involved. But now one might say: the chief thing underlying your ability to do that is that you have a mental representation of those first ten bars; and your having that representation might well be a state of the brain that we can discover.

That's just the Tuning Forks move.

New evidence has been found that people with perfect pitch, the ability to recognize a note that they hear without having the identifying pitch sounded beforehand, use a special set of mental tuning forks other people lack. The findings suggest that those forks let them distinguish between pitches by recognizing each tone.

The evidence for this claim turned out to be as follows. There is a certain brain wave, called P300, which has been claimed to be associated with memory. Subjects with perfect pitch, when asked to identify the pitches of tones played to them, have a small or absent P300 brain wave, whereas those without perfect pitch had larger P300. The cognitive scientists took this to mean that the latter were reaching into memory "in order to compare what they heard with a remembered standard". The *absence* of P300 in subjects with perfect pitch was the sole evidential basis for the claim of mental tuning forks.

The argument seems to be this. Those who use memory use it for a “remembered standard”. Those with perfect pitch do not use memory. Therefore they must have a standard not in memory; thus, mental tuning forks.

Tuning forks! Are they sounding all the time? If so, how does the subject know which fork’s pitch to pick out when confronted with a tone to identify? If they are not always sounding, how does she know which one to sound, when confronted with a tone? (In the research report published in the journal *Science* the language was more restrained: “subjects with this skill have access to permanently resident representations of the tones”, but clearly the same questions arise about such representations, even without the picturesque language of “tuning forks”.)

Real tuning forks give us the means to identify pitches; but they do so because we have the practices and abilities to use them. The internal standard is supposed to give us the means to identify items, but without practices and abilities, for the internal standard is also meant to operate by itself, in a self-sufficient manner. (If it were not, it would be redundant: why not settle for practices and abilities themselves? It hardly adds explanatory value to say, instead of “She can recognize that as middle C”, “She has a permanently resident mental tuning fork at middle C and can recognize when a tone is the same as that”.) In short, the internal, mental determinant is imagined on the model of external standards, but in the absence of the surroundings that make the standards into standards. This is how the model is misconstrued.

There are many lessons to be learned from this. In general, we could say: the move to a localizable “state of understanding” (from a general ability) is like this move to “resident representations”. Upon scrutiny, we are meant to see that we don’t have a grip on what we are hypothesizing, in particular, what we are hypothesizing can’t do what we want it to.

Our objector of course says that’s not at all involved in what he’s imagining we could discover. What is being imagined as being in principle discoverable is not some confused notion of standard or representation, but a physical state that will *cause* the manifestations of understanding.

Here Wittgenstein's evocations of the nonuniformity, variegation and "spread" that is inherent in cases of understanding make it unclear what the causal role of the state is supposed to be. If the objector is saying that we might discover that which biochemically causes us to behave in ways that a person who understands does, to this we can now point out that the latter is simply not definite enough: there is no surveyable checklist of such behaviors, inclusion of any particular behavior will depend on a not circumscribable range of features of the situation and on the person's particular circumstances and history. Again, what we are imagining, in talking of a brain state identified as the understanding by its causal location, is not at all clear.

A somewhat different cast can be put on the consideration of our practices, as follows: the things which we count as behavior associated with understanding are not grouped together by any scientific unity; we have no grasp on the collection in scientific terms. When we talk about manifestations of understanding, we are seeing, or conceptualizing, the behavior through the concept of understanding; it is only that concept that links them together. Wittgenstein seems to be exploiting this in *Remarks on Philosophy of Psychology I*, §§903-906 (= *Zettel*, §§608-611):

§903. No supposition seems to me more natural than that there is no process in the brain correlated with associating or with thinking; so that it would be impossible to read off thought processes from brain processes. I mean this: if I talk or write there is I assume, a system of impulses going out from my brain and correlated with my spoken or written thoughts. But why should the *system* continue further in the direction of the center? Why should this order not proceed, so to speak, out of chaos?...

§904. It is thus perfectly possible that certain psychological phenomena *cannot* be investigated physiologically, because physiologically nothing corresponds to them.

§906. The prejudice in favor of psychophysical parallelism is a fruit of primitive interpretations of our concepts. ...

If we look at all of the things that we call manifestations of understanding, we find no physical or physiological regularity in them. Hence there is no reason to expect a physical systematicity in understanding. If you eliminate all the mental notions, what are you left with by way of the data? What you have left, to do the science on, is very little indeed.

The note Wittgenstein is here sounding has a Quinean ring. In fact, I do see a confluence between the two at this point. If one restricts oneself to the austere language of the physical sciences (which is the rightful home of the notion of cause that the objector is trying to exploit), then the data are very thin: you have people's movements and emissions of noises of various sorts (it would already be illicitly interpreting the data to say there are actions, and there are words being spoken). In that, you do not see understanding at all. But then there exists little reason to think there will be a scientifically discoverable state that will group together just the right things under the concept of understanding. This is a plausibility argument, although I think a rather strong one.

There is an objection to all of these points, though. Surely, it will be said, one can — without acceding to any overblown ideas of the mental — imagine the discovery of a physical state that a person is in if and only if that person, say, understands a particular word; a state that is merely *coextensive* with understanding, with no further structure presumed.

I'd claim this is far less clear than it might seem. For what Wittgenstein emphasizes — the nonuniformity of our criteria for understanding and their intertwining with much else in our physical, social, and mental lives — represent differences from the models we have of states and processes in physical science. The features we rely upon in finding general properties of or structures in, e.g., physical substances, features that lead us to call them natural kinds and that allow us to generalize from one sample to another, are lacking. Thus it becomes unclear how anything we discover in some cases in which we would ascribe understanding could be justifiably generalized to all cases. There are, in a sense, too many singularities.

Perhaps that should be the end of the matter; but one might feel inclined to indulge the objection some, and to suppose (for the sake of argument) that we can carve out some class of cases that *is* tractable enough from the standpoint of physical science

to support inductions yet broad enough to be interesting. Now suppose further that we discover a physical state common to all cases within this class that are cases of understanding. Is this a discovery of a state of understanding? There is in Wittgenstein's considerations a suggestion that, even if we can make sense of being able to identify some physical features of the brain somehow linked with cases of understanding, then anything that we could discover would be at best concomitants of understanding, and not what the understanding itself is. "For even supposing I had found something that happened in all those cases of understanding,—why should *it* be the understanding?" (§153).

Obviously, were we to discover that, in some tractable class of cases, an understanding of the word "eleemosynary" goes along with a disposition to blink upon hearing the word, then we have discovered an accompaniment of understanding, not anything we would identify with the understanding itself. The blinking has no connection to those things that are importantly involved in understanding, e.g., correct usage and the ability to explain the word. Hence the discovered disposition seems extrinsic to understanding, a mere accidental concomitant, rather than anything we would be inclined to call the state of understanding.

The demands we would impose for a state's being more than a mere accompaniment of understanding depend on what we expect from the identification of a "state of understanding". This is, I think, corroborated by consideration of an intermediate case. Ignoring numerous difficulties and obscurities, let us suppose we can imagine the discovery of a brain state that is common, within some tractable class of cases, to those who understand the word "table" and that is identified by causal links to correct usages in just a few straightforward cases, and links confrontations with paradigmatic tables. In this imagined case, are we to call the state the understanding, or merely an accompaniment of understanding? My reaction is to echo Wittgenstein's remark: "Say what you choose, as long as it does not prevent you from seeing the facts." (§79). Whether or not one claims the identification, what is important to note is how little by way of further enterprises are supported. Precisely because the state lacks connection to important features of understanding, it provides no basis for claims about the "structure" of the understanding, and little notion of the content of what is understood. It does not even have links to straightforward verdicts about tables and non-tables beyond the paradigmatic few, and thus does not intrinsically rule out other possible different understandings. As

a result, the connections between understanding and content that are crucial to any philosophical, cognitive, psychological, or semantic theorizing are absent.

The lesson is that once we reflect on any particular task, philosophical or mentalistic, that the discovery of a state of understanding was to do, the paucity of features that could be built into a specification of a brain state will make such a state look too little like the understanding “itself”. Given what we wanted from a definite, particular state of understanding, what we can imagine discovering scientifically will not suffice.

Clearly, though, the success of this line of argument will rest to a considerable extent on Wittgenstein’s more basic strategies to show the inaptness of definite state or process characterizations of understanding. That is, one has to undermine a picture of the mental apparatus at the start, and emphasize the intricacy, connectedness, and nonuniformity of our practices of ascription, so as to make clear how different this is from the case of mechanisms in the physical world.

(Wittgenstein’s point throughout *Philosophical Investigations* is that questions about the nature of understanding, thinking, etc. can't simply be assimilated to questions framed in natural science.)