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Science is a runner. Philosophy?

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The Demarcation

If we are to talk about what is science, everyone points at Karl Popper and falsificationism (Popper, [1963] 1998). Before him there were others confronted with the problem of demarcation between science and religion, science and pseudoscience or science and non-science. Following Popper, though, we have Kuhn and Lakatos for instance.

Kuhn brought Popper's theory one step higher, introducing puzzle-solving science into the equation, apart from extraordinary science. And Popper's falsifiability account of science fails to describe the former, the normal science (Kuhn, [1970] 1998).

Then Lakatos introduced research programmes as a way to demarcate science from non-science, or progress from non-progress (Lakatos, [1977] 1998).

L'objet petit a de la Science

But with all these demarcation lines, may they be clear, blurry or hourglass dependent, what is science per se? Well, "it is simply not possible to give a neat definition—specifying necessary and sufficient characteristics [...] Science is a phenomenon that has developed through the ages" (Ruse, [1982] 1998, p. 39)

In looking for defining features, the obvious place to start is with science's most striking aspect—it is an empirical enterprise about the real world of sensation. This is not to say that science refers only to observable entities. Every mature science contains unobservables, like electrons and genes, but ultimately, they refer to the world around us. Science attempts to understand this empirical world. What is the basis for this understanding? Surveying science and the history of science today, one thing stands out: science involves a search for order. More specifically, science looks for unbroken, blind, natural regularities (laws). Things in the world do not happen in just any old way. They follow set paths, and science tries to capture this fact. Bodies of science, therefore, known variously as "theories" or "paradigms" or "sets of models," are collections of laws. (Ruse, [1982] 1998, p. 39)

We can see that science tries to explain *effects*—why things are as they are—or that it tries to explain *predictions*—what is going to happen. We can see that science tries for *testability*, meaning a theory needs to be open to be checked against the real world. And that goes two ways. A theory needs to look for *confirmation*, that is to look for some empirical support, and this also means that it needs to be open for possible refutations. But a theory also needs to be *falsifiable*, that is to have the means to see under what conditions the theory might not apply. Ultimately, science is *tentative*. Scientist merely try to come up with new theories, and they need to be prepared for their theories to be rejected.

Above all, science is philosophy-embedded. "There is no such thing as philosophy-free science; there is only science whose philosophical baggage is taken on board without examination" (Dennett, 1995).

Maybe the above list is not complete, or not accurate to one's view on science, but in the end, these and similar items seem to be the only ones that give us a glimpse of what science

is, or actually what science could be. These are the characteristics of the unattainable object of science, or Lacan's *objet petit a*.

The Runner

In this journey of mine, with philosophy on the left and science on the right, I can only continue by picking your brain: if running would be as abstract or loose in meaning as progress, as science, how would you define a runner?

An analogy will surely help to depict the quintessence of my inquiry:

You are the observer. And you want to define a runner.

Guess what? You're lucky! Next to you there's a runner and he starts doing the obvious, he starts running.

You have two ways to do your observations.

Start running along with him, or to stand still.

Decide to start running along with him, same speed, same path, literally breathing down his neck, and you will be a runner yourself.

Decide to stand still and the runner goes will go out of your sight at once.

You say you have more than two ways?

Well, decide to stand still and ask him to run slower, but how much slower can he run so that his running will not turn into walking? What do you do with the times he's running faster than your requested speed?

Or decide to stand still and ask him to run as fast as he wants to, but within your eyesight. What then? Would he be a runner outside your eye sight? Or what if you confine the runner to the surface of your kitchen, simply because you suffer of hypermetropia?

Catching the Runner

The previous analogy links to another clash between philosophers. In trying to see if philosophy is progressive or not, two trends evolved and two categories of philosophers were born: the optimists and the pessimists of philosophical progress.

On this topic, William Gerber speaks best for me, even if he did it three decades ago. "The idea of progress in philosophy is a tangled web. [...] the question whether progress occurs is disconcerting, thwarting, and vexatious." (Gerber, 1973, p. 1) If progress means truth, then one can ask *What is truth in philosophy?*

But let's not try to find the answer to that now. We can pretend that we are optimists at first.

We can do that quite easily if we talk about specific cases of progress in philosophy. There's almost universal acceptance regarding this type of progress i.e. the verifiability theory of meaning (Gerber, 1973, p. 3) So, as optimists, we can say that philosophy is progressive.

If so, if philosophy truly is a progressive research programme, then philosophy is science (Lakatos, [1977] 1998, p. 25). Or at least it could be, if we find a proper paradigm and straightforward methods, as some would conclude (Hume, 1986, pp. 41-46). Then how can it be that philosophy, now science, would try to define science, that is, itself?

Can you define yourself? Objectively, that is. Tell me what's necessary and sufficient for someone else to become you! Not to mention that giving this definition should not only reflect who you are now, but also how you will become the best that you can be. Because this is what we expect of science - to live in an unlimited, yet righteous space.

Now let's switch sides and become pessimists. It is obvious that as optimists we fail to define the runner. We now take lack of progress as an essential feature of philosophy. We take it since lack of consensus or formalization is essential in order not to take away foundational worries about the explanandum and the explanans. If we were to do that, we would deprive philosophy of its quintessential matter. Therefore, we need to remain as not runners.

Yet, as not runners, we cannot follow the runner. He will disappear on the horizon. He may come back, only to disappear once again. We will not be able to observe him properly. Because in essence what we are trying to do is reverse engineering. Science already exists. At first it was Latin for knowledge, and then it became more of a system that acquires knowledge. Specifically how, we do not know. Empirically, yes. But only empirically? No. Does the runner always move his hands? Does he always wear sneakers? Does he always sweat? Does he look ahead?

Runner. What is a runner? Let's go for a circular definition. A runner is someone/something that runs. So then what does it mean *to run*? Do you know that there are almost 30 definitions when used as an intransitive verb, another 30 when used as a transitive verb, another 30 as a phrasal verb and yet another 20 when used in idioms according to The American Heritage Dictionary? (run, 2004) And this is a term that is less loose in meaning than progress. Is that even a definition? Or a collection of definitions, maybe? Should we then have a collection of definitions of science? Of progress? Isn't that a bit bureaucratic and confining, to say the least?

Mal de siècle ou pas?

George Sarton made an interesting affirmation in 1936, which looks unquestionable for many, me included: "the acquisition and systematization of positive knowledge are the only human activities which are truly cumulate and progressive". There is no progress with a "definite and unquestionable meaning in other fields than the field of science" (Sarton, 1936). Why? Because *progress* is an axiological or a normative concept. It is not the same with neutral descriptive terms like *change* or *development* (Niiniluoto, 1995).

After reading Lakatos speaking of progressive and degenerating research programmes, one can ask *Why do we still keep philosophizing then?* Lakatos gave half of my answer. He said that “while it is a matter of intellectual honesty to keep the record public, it is not dishonest to stick to a degenerating programme and try to turn it into a progressive one” (Lakatos, [1977] 1998, p. 26).

The other half has to do with understanding that philosophy is already fulfilling its mission. Take philosophy as a purely conceptual idea - if possible, that is. Now, since progress is a *goal-relative* concept, as we envision some progress for the concept of philosophy, what can philosophy’s goal be? The goal can be simplistically identified by its method: never stop questioning.

Say we implement the concept. At some point in time, we started to question things. Can anyone prove that mankind has stopped questioning since then, whenever *then* is? If not, then I posit that as long as we question everything, as long as *what, why, what if*, and any other interrogative adverbs will question our existence and anything that relates to us, philosophy fulfills itself. Can it be that easy? I say it can, because this type of progress fulfills both backward-looking (in order to stop, it means you once started) and forward-looking criteria.

Simply because it has already progressed to the point where it is fulfilling itself, should we kill philosophy because it may look like it is not progressing any longer? Do you kill freedom of speech because it doesn’t show progress? Or a flower? Is a flower on our desk not influencing us? Can a flower not help us progress, or at least develop, even if the flower doesn’t progress? If we were to live surrounded by thousands of flowers, for each second of our life, it could be that their omnipresence would increase the chances for them to be ignored, and thus on their way towards being wiped out. But we are not.

In the same way, we are not surrounding ourselves with continuous questions. Were we to do so, we would suffer from neurosis. I would question not only my thoughts as I write this essay, but I would question the existence of my laptop, or the existence and the works of my hands, of my true self. I would enter a loop that leads nowhere.

Why does that not happen? Because of motivation, I say. Each and every one of us makes decisions, acts, thinks based on motivation. Everyone can observe and not necessarily evaluate, everyone has feelings and everyone has needs (Rosenberg, 2005). What you observe, what is your feeling towards the observation and what is your need regarding the observation and the feeling is what builds up the motivation.

The lack of success in defining science can very well come out of the lack of proper motivation. Do we succeed more or less many times when we have no motivation? I say less. It’s essential to know why we strive for an achievement. What will we achieve and where will we go once we define science? Lakatos says that “it is of vital social and political relevance” because it will help us not make similar mistakes as we did in the past i.e. persecution of the Mendelians, excommunication of the Copernicans (Lakatos, [1977] 1998,

p. 20). I can only ask myself rhetorically, like Marshall Rosenberg does, where did a fear-driven motivation take us?

I'm not saying that proper motivation is what we are lacking and that this is the pure reason why we fail. We have had the ethical motivation to do so many things, yet we didn't. Logics has already defined this very clearly as *modus ponens*¹. Some might say we already have the motivation: growth. But growth is surely not answer, as *Limits of Growth* describes, since if we manage our resources the same way as for the past 75 years (1972 as reference), we would destruct the human race—not by arms, but by a collapsing world economy (Meadows cited by (Churchman, 1992)). Growth, whatever the object is, needs limits, constraints, safety measures, whatever you want to call them, in order to be sustainable. Just think of the atom bombs. And in that sense, we may as well assume that our subconscious is protecting us from discovering more—because it has no obvious and safe answer to *What then?*

Even so, with this fear-driven motivation, we seem to forget one elementary thing. That experience counts as knowledge. We may debate whether it is scientific or not, ethical or not, but as long as we do not act against humanity, against our own existence and whatever we are naturally surrounded by, we really should get something straight here. When we took astrology out of the set *S* of science, it did not mean that science got smaller. On the contrary! Knowing that astrology is not in that set *S*, because that set wouldn't be our goal any longer, that alone made *S* bigger. Science then added that astrology is not part of science. And by knowing what it is not, it grew.

Love of Wisdom

Progress in philosophy cannot, or at least should be regarded as “achievement of consensus”, but as providing the means for “discovery, judgment, ordering, and inquiry”. (McKeon cited by (Gerber, 1973, p. 4)

That's why it is still the Greek “love of wisdom”—*philo-sophia*—that portraits most genuinely the world of philosophy. But in trying to make everything explicit, we forget that wisdom can be very well just tacit. We forget that explicit doesn't necessarily mean better. Explicit is simply clearer, more obvious, shareable. But tacit is so much more powerful, quicker, yet forgettable. But for instance so is your RAM². Have you never had your computer crash down, while losing a document that was stored in RAM? Would you like to have no RAM, even if that would imply zero chances of losing documents, but a slower machine?

I'm applying the same line of reasoning to philosophy of science. Do we need to define science because it's better or because we want to make it easier? Is easier always better? Nowadays an e-mail is said to be better than a letter. But I ask of you to think of the quality

¹ If *p* implies *q*, and *p* is true, then *q* is true. Yet, if *p* implies *a* (an ethical imperative to act), and *p* is true, it does not follow at all that *a* will occur.

² Random Access Memory

of the writing and the quantity of transferred knowledge in an e-mail, and in a snail mail letter.

Going further, deeper and broader, I ask: what happened to the ethics? We inquire what is science and what is not science, what is good science and what is not good science, what is science and what is pseudoscience—and I'm sure many other nuances of concept—but what about what is ethical or not?

Wisdom is not only knowing, but also what you do with knowledge. So what do we do with knowledge? Well, while in second world war “about 7500 military personnel were killed or missing each day”, in 1992 we were letting “35000 children die every day in the world from starvation and starvation-related diseases” (Churchman, 1992). A decade later, we let only 16000 die (Black, Morris, & Bryce, 2003). I wonder if that's ethics or plain statistics.

Above all, what is love? A state, a felling, you'll say.

But can this feeling exist without life? Then why aren't we preparing a world for our progeny? A world without food shortages, with far more decent education, with recreation and with an environment that is cared for.

That, I believe, would be philosophy. True love of wisdom. Because you first need to love the shell of wisdom—humans—in order to appreciate the contents.

In order to discover, one does not need to know the destination. One needs only driving skills—or methods—, a car—or tools—, the ability to see no more than a couple of meters ahead—or the ability to observe—and the will to push the acceleration pedal—the motivation. In order to discover, you do not need to see the whole path, or to know where you will end up. There simply is “no singular path to truth about nature. The history of science has shown that different approaches work for different problems.” (Lessl, 2005)

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