

The progression of Scientific, Moral & Religious Thought

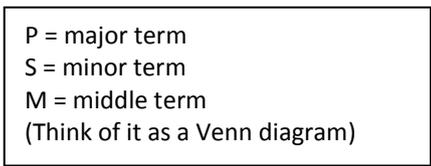
Thus far we have looked in some detail at the development of scientific thought in the west; this development has been, to some degree, intermittent but, nevertheless, always of a kind that has allowed it to be specified in certain ways. For example, with the partial exception of the work of Paul Feyerabend, it has been generally agreed that scientific development proceeds largely according to the Aristotelian model with certain later developments incorporated into it. So, whilst Aristotle conceived of science as operating in a linear fashion in which the establishing of inductive principles allowed for deductive arguments to be that, in turn, led to further investigations of the same kind, it became apparent that there was substantially more to it than that. Karl Popper, for example, illustrated successfully that it was much more fruitful to attempt to falsify hypotheses than to try to confirm them and Thomas Kuhn argued that, from time to time, scientific practice experienced massive upheaval in the form of what he called 'paradigm shifts', thus undermining the Aristotelian thought that the progression of science was linear and steady.

Nevertheless, with the exception of Paul Feyerabend, it has been generally agreed that scientific thought is answerable to the facts – the facts being the determinants of the acceptability of hypotheses and paradigms. You will recall that, when talking about paradigm shifts, Kuhn argued that they occurred when the accepted paradigm was no longer capable of explaining the facts.

Facts are interesting things. They are true and can generally be understood as supplying definite answers to questions. Indeed, one common complaint that scientists make about humanities disciplines is that, in many cases, they do not deal in definite answers; they erroneously believe, as we shall see, that knowledge and understanding are answerable to factual content. *Pace* Feyerabend who argued that facts are as much of a cultural phenomenon as, say aesthetic appreciation, it is generally believed that they are answerable to what can be observed and deduced – the deductions themselves being answerable to truth, falsity and modes of valid and invalid inference. There are many modes of valid and invalid inference but, to give you an idea of what I mean, I will digress for a moment in order to make the distinction clear.

A Valid Inference

All M are P
All S are M
∴
All S are P



An Invalid Inference

All M are P
All S are M
∴
All P are S

As you can see, in the valid inference, the conclusion necessarily follows from the two premises, whereas this is not the case in relation to the invalid inference. "All S are P" is a fact as deduced from the two premises in the valid inference (it is true) but "All P are S" is not (we do not know if this proposition is false but it cannot be determined as true from the two premises; thus, further investigations need to be carried out).

Thus, we can see that, with the exception of Feyerabend, facts and their attendant modes of truth, falsity are internal to how science has been conceived since at least the time of Aristotle to the present day. Even Thomas Kuhn understood paradigm shifts as a phenomenon that was answerable to the facts (insofar as it is factual content that cannot be explained by a paradigm that, eventually, leads to its breakdown).

An aspect that runs in parallel with this is that of the language of propositions. In his *Principia Ethica*, the philosopher G.E. Moore argued that "goodness" as a concept is indefinable and that, therefore, any attempts to reduce it to psychological assertions or evolutionary theory will inevitably fail. Goodness cannot be defined as it has no properties of its own unlike, say, a horse. Accordingly, one can see that for a statement to be true, the terms within
Page 1 of 3

it (the concepts it employs) need to be clearly and universally understood. In this sense, we can see how facts about the world are heavily reliant on language use (this is partly what led to Feyerabend's belief that science is no more than a culturally relative phenomenon like any other). Certainly, if the terms within a proposition are not agreed upon, we cannot coherently say that it is a fact. Take the two statements as examples; the first is either analytically true or a statement about the classification of three sided figures; the second is a synthetic statement.

1. A triangle has three sides.
2. The door is orange.

If we treat (1) as analytically true (tautologous) then we can say that it is true by definition; it cannot be false. It is a fact that a triangle has three sides. If we treat it as a statement about classification then we are saying that all three sided figures are (or should be) called triangles; once that is generally agreed upon and understood then the statement subsequently becomes a tautology.¹ (2) is far less complicated – provided we are agreed about the terms “door” and “orange” and clear also about the functions of determiners (“The”) and copulas (“is”) then we can, on the basis of observation, decide whether or not (2) is true or false. If however, the terms are unclear or not agreed upon then neither (1) or (2) can be facts. Scientific practice requires this level of clarity and agreement in its language. But is this the only way we can achieve understanding?

I now want to return to two points that we have addressed separately in previous classes. The first concerns necessary and sufficient conditions for concepts; the second, what rational justification for a position amounts to.

It seems fairly uncontroversial to claim that we cannot have facts – there can be no factual content – without the concepts that make up factual statements having clear definitions. Plato was aware of this and it was this awareness that drove him to develop his Theory of Forms. In essence his theory was an attempt to prove that all the concepts we use *must*, ultimately, comprise a series of necessary and sufficient conditions; only once we have understood these can we truly be said to understand the world and what we are saying about it. Rational justification seems to rely on the idea that we understand and are clear about meanings of the concepts we employ in such justifications. But the question remains: do all concepts function as Plato believed? If they do not then this has implications for the nature of rational justification. Before moving to that discussion, I will just flag again that rational justification can frequently look like the kind of justification used in science without actually being scientific – for example, Anselm's ontological argument and Aquinas' first cause arguments. Both are rational arguments insofar as they invoke logic. However, neither can be investigated scientifically. For Anselm there is the substantial question of what perfection actually amounts to; given that there are no agreed upon standards, any proposition falls foul of G.E Moore's objection. For Aquinas, there is no way, even in principle, that science (*qua* science) could establish (verify) an event as the first cause – not least because of Popper's observations about falsification. Thus, there was a trend for this kind of justification that existed independently of scientific practice and, indeed, predated the resurgence of science in the west. What is responsible for this kind of thinking? – Is it something independent of human thought (i.e. an external cause) or, merely, one of the ways in which we have evolved to think? Whatever the case about that, rational justification seems to require logic but that, as we shall see, is different from saying that it amounts to following logic wherever it leads. For the moment however, I want to return to the question of whether or not Plato was right about all concepts requiring necessary and sufficient conditions in order to be understood successfully.

Let us take the concepts of “roughly” (as in imprecise) and “solidity” to begin our discussion. If I ask one of you to stand “roughly there” by pointing out an area in a fairly small room, the amount of ground that is appropriately covered by “roughly” is very different from what it would be if I said “meet me roughly outside Waterstones”. So it

¹ It is, nevertheless, only contingently the case that “triangle” means a three-sided figure.

would appear that “roughly” does not have a series of necessary and sufficient conditions internal to it; rather, it seems to be defined by the nature of our practices, as opposed to something independent of such practices. This is similarly borne out by the concept of solidity.

Some commentators believe that science has revealed that solid objects are not really solid at all because they are composed of atoms with many gaps in between them. Thus, things that we believed to be solid have been shown not to be so – the concept of solidity has been shown to be false, it is believed. However, when philosophers and scientists claim that the concept of solidity has been disproved by science because solid objects consist ‘of particles filling space so thinly that it can almost be called empty’ they misleadingly make it sound as if our everyday use of the word ‘solidity’ is mistaken. None of this suggests that scientific discoveries about the nature of solid objects are incorrect but the manner in which they are articulated, apparently, contradicts what they are trying to explain (solidity). Thus, the explanation becomes confused in the sense that the phenomenon being explained (solidity) is, apparently, not solidity at all. This would be acceptable if solidity were something we merely speculated (or formed hypotheses) about; but that is not so. The table upon which I am writing is solid; I could not write this handout if it were a gas or liquid. Indeed, the concept of table relies on its being solid (this is a relational characteristic). Once again, we can see that the meaning of solidity (its grammatical foundations) is related to practice.

Now let us consider the language of moral evaluation – so, for example, I am thinking about language that intelligibly invokes critical concepts such as callousness and sentimentality. They are concepts (among many others) that define that realm of meaning which pertains to the moral. One cannot, for example, evaluate a proposition in physics as being callous or sentimental (although one can say that false results were caused by callousness or sentimentality) but one can accuse a member of the public who wails continually for a whole month over the death of Princess Diana as being sentimental (in much the same way as one could label someone as callous if they cared not a fig about her death and her children in the wake of it).

But what gives authority to a claim that someone is sentimental or callous? And what provides us with so much as an idea that they are such? A substantial part of any answer needs to focus on the typicality of response that characterises human ways of living, together with that which gives rise to it – namely, the significance and unavoidable recognition of others as moral claimants (and moral claimants of a particular kind). Such significance is that which informs the ways in which arguments pertaining to the realm of the ethical are judged (and sometimes undermined) by their conclusions; the merits of the conclusions themselves standing in relation to how we understand of the significance of their subject matter. Put another way (for the time being this will have to do as I have run out of time!): our moral concepts are both expressive and constitutive of the ways in which we conceive of the object to which they are being applied. If people were not significant to one another in ways that allowed for distinctions to be made between authentic and sentimental grief (for example) or callousness, then such a lack of significance would be a form of life in which such reactions could never be understood as such. I hope to have covered this aspect in more detail during the class itself but we will have to see where we end up!

Questions:

1. Are there moral facts?
2. Is moral progress the same as scientific progress?
3. Do scientific developments change moral outlooks? (How?)
4. Do moral outlooks change scientific perspectives? (How?)
5. Is the structure of scientific thought and moral thought the same?