

Can western science be value-free

Philosophy



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According to the Austrian philosopher Ludwig Wittgenstein, any proposition we make claiming to be science will in fact be nothing more than a play with words. "All philosophy is a 'critique of language'," he says (2001, p. 23). If we accept this view, then the practice of science can either be for mere amusement, or else it must have a purpose attached to it prior to taking up the investigation, because if it is not for amusement the scientific statement, which we hope to attain to at the end of our investigation, must be serving some other ulterior purpose. In either case, science is no more value-free.

Scientists who profess to a philosophy of positivism will claim that this ulterior purpose is none other than the acquisition of ultimate truth. But such truth cannot be had through the "word games" of Wittgenstein. And of course positivism is itself a value. This philosophy does not deny the fact that scientific propositions are indeed word games, but nevertheless insists that enquiry should not be abandoned, and indeed should be limited to only such questions that promise positive and unambiguous answers. Most scientists seem to have a clear conception of what constitutes positive science.

It would generally be agreed that to measure the elasticity of a solid substance is positive science. But quantum physics intervenes to tell us that we cannot hope to make the exact linear measurements necessary in such a task, so that even here we are not free from ambiguity. Therefore the choice that the positivist makes is value-laden too. Niels Bohr, who was instrumental in the formation of quantum physics, also complained about the linguistic obstacle: It is wrong to think that the task of physics is to find out

how nature is. Physics concerns what we can say about nature... What is it that we humans depend on?

We depend on our words. (cited in Pais 2000, p. 24) The language at his disposal, he insisted, was inadequate to explain quantum phenomena. It constrained him to think in terms of the observer and the observed, and any statement involving such led to paradox. It was as if the very act of observing brought the object into existence, which prior to the act of observation was a " wave function", or a composite of possibilities only. Einstein also abhorred such a picture and complained that " God does not play dice! " In this way the quantum physicists found themselves mired in word games and struggled to escape.

Today quantum physics is a coherently structured discipline, and the paradoxes and contradictions of its formative period have been tamed by neat mathematical expressions, which implies that it has conformed to strict values. But such values are not inherent in the science itself, but are rather imposed from beyond, e. g. the aesthetics of the Newtonian paradigm. Next we focus on Western science. What are the values that determine the pursuit of this science?

The experimental method, widely acknowledged to be the cornerstone of this science, was first made explicit by Francis Bacon (2001, p. xii), who said that nature was to be put on an " experimental rack" and its secrets forcefully extracted from her. This description brings out the crucial nature of the relationship between the Western scientist and nature as one of opposition. Instead of harmonious co-existence, the inherent urge was to overcome nature. Knowledge must be gained in order to overcome

knowledge (nature). In this way Western science can be said to be burdened with inner contradiction, and its aggressive opposition to nature is what determines its value.

This is the conclusion of Nietzsche, for whom Western science is a project of the mind overcoming matter, or the intellectual capacity striving to overcome the instinctual. Nietzsche was even more specific and located the origin of such a value system in Christianity. A preamble to this idea is Kant's critique of 'enlightenment'. In his seminal essay "What is Enlightenment?" he exhorts us thus: "Have the courage to use your own understanding" (1983, p. 41). Kant's philosophy is in answer to empirical skepticism.

The original spirit of the Enlightenment, after the widespread adoption of the Baconian method, and after the spectacular triumphs of Newtonian mechanics, was that science promised absolute knowledge and complete domination of nature. Philosophy, however, struggled to support such optimism, and was eventually led to the dead end of empirical skepticism. Kant elaborated on why absolute knowledge is impossible. We reason by the means of sentence structure of subject and predicate. The subject is cause of the predicate. The chain of cause and effect has no beginning, nor end, for each cause is in turn the effect of another preceding cause.

This is how Kant describes practical reason, and is what facilitates understanding of contingent reality, and physical science is the epitome of such understanding. But such is not knowledge. In scientific statements we may proclaim an effect to follow a cause, but the cause is not the final one, for it has antecedent causes, and we may never arrive at the final and primary cause. But this does not imply that we abandon science. He posits

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the existence of “ pure” reason, transcendental to practical reason, and the repository of knowledge.

We are also spurred by the categorical imperative to follow the moral path, that which delivers knowledge, and identified with the ultimate good. The moral path to knowledge cannot be demonstrated, says Kant, but is actualized by faith. The sum accomplishment of Kant is that he has identified faith in the Christian God as the propellant behind the phenomenon known as the Enlightenment, and thus Western science. In doing so he poignantly contradicts the professed philosophers of the Enlightenment who announce Christianity as their archenemy.

Nietzsche completes this analysis when he identifies Christianity itself to be the driving force. His starting point is a criticism of Kant’s “ subject and predicate” argument. To affirm “ subject” and “ predicate” is to affirm ‘ being’. Not ‘ being’ but ‘ becoming’ is the entire extent of reality for Nietzsche: “ the doing is everything” (1956, p. 179). The Will is engaged in becoming when it moves forward, but is stagnant when to contemplates being. The first is the “ will to power”, a positive force, and the morality of the master race. The second is the “ will to know”, and coincides with slave morality.

Christianity is the embodiment of the second, thinks Nietzsche. It shuns the natural and the instinctive, and indeed wants to overpower nature through the strength of the intellect (cited in Nehamas 1985, p. 122). This, he explains, is the origin of Western science. Max Weber took this analysis a step further and identified Calvinism as the specific branch of Protestant Christianity that sprung Western science, and the corollary to it being

capitalism. The Protestant work ethic, says Weber, makes work, and the accruing of wealth, as a end in itself, and not motivated by greed or any other sinful trait (2002, p. 309).

Science provides the bulwark to the operation of the Protestant work ethic. Taking all this into account, it is plain to see that Western science is far from being value free. We had started by showing that no science can be value free. The very language we employ, when we come to express the findings of our science, is replete with values, these being culturally derived. We next delved into the origins of Western science, as analyzed by Kant, Nietzsche and Weber, in the hope of identifying the specific values that motivate it. Such an analysis suggests a powerful religious and cultural background to Western science.