Does positivism really 'work' in the social sciences?

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'Positivism', Giddens writes, 'has today become more of a term of abuse than a technical term in philosophy'.[1] Though there are few today who would refer to themselves as "positivists", the influence of positivism is still widespread, with it exercising considerable influence over the natural and social sciences, both explicitly and implicitly. In the years since the term was popularised by August Comte the approach has gone through several stages of evolution, though several core elements have remained at its heart. This essay shall begin by examining what these elements are, how they have changed through time, and what positivism looks like today. It will then consider the strengths and weaknesses of the epistemology – both in its wider context, and with specific reference to its application in the social sciences – concluding that although positivism's attempt to present definitive knowledge of the world is commendable, ultimately it is flawed. Its excessive confidence in its claims to objectivity and empiricism do not stand up to scrutiny when used in both the social and natural sciences, and thus it cannot be truly considered to 'work'.

The meaning of the term 'positivism' has evolved over the years, though at its core several key aspects have remained constant. It is based on a foundationalist ontology – that is, one in which the world exists independently of our knowledge of it – and at its heart is the promise of unambiguous and accurate knowledge of the world which can be arrived at through sensory experience. Similar approaches are to be found throughout the history of philosophy but, in essence, positivism is a product of the Enlightenment. The shift from speculative metaphysics which occurred in the period produced an epistemology which was 'grounded firmly in *something that is posited*', and which would reveal the true nature of the world not 'via some kind of abstract reasoning process … but by a study of the "given" (in Latin *datum* or, in the plural, *data*)'.[2] The data with which positivists proceed is that which can be observed and therefore ascertained through the application of the scientific method. Importantly, for a positivist, this approach can be applied to the social sciences with just as much success as it is to the natural sciences. Relationships between social phenomena can be observed with objective and unprejudiced eyes in the search for true knowledge of a subject, with an empirical, rather than normative, mindset found within the questioning. As such, causal relationships between social phenomena can be established.

This description of positivism has been generalised as it is impossible to speak for all those who have claimed a belief in the positivist approach. Throughout its history positivism has experienced several noteworthy alterations. The process which Comte laid out was born of a desire for social reform. It urges the researcher to seek universal laws which can be applied regardless of time and location via observation, experiment and comparison. For Comte, the previously dominant theological and metaphysical philosophies were incapable of this and had to be rejected. Once positivist science was embraced the human mind could fulfil its true potential and then, through scientific progress, could a just social reorganisation take place. Comte's positivism is different to that held by its adherents today, yet its commitment to scientific methodologies and the search for objective truth in the study of natural and social phenomena renders it sufficiently similar.[3]

The Vienna Circle, under Moritz Schlick, developed logical positivism which sought to build on Comte's application of natural science methodology to the social sciences. By introducing the exactitudes of mathematics to philosophy, the group fully embraced empiricism and rejected all else – metaphysics, ethics, theology, aesthetics – as insignificant in the conduct of scientific research.[4] Comte had actually highlighted the potential pitfalls of using mathematics in the investigation of social phenomena, warning that 'mathematical analysis itself may betray us into substituting signs for

ideas, and that it conceals inanity of conception under an imposing verbiage'.[5] This did not prevent the Vienna Circle from developing their logical positivism which used language similar to that of physics and drew on Wittgenstein's *Tractatus Logico-Philosophicus*. Wittgenstein's influence led the Circle to adopt the 'verification principle' which stated that no statement was meaningful unless it was capable of being verified. It divided statements into one of two categories: analytic and synthetic. Analytic statements are those in which a subject's meaning (or lack, thereof) is intrinsic.[6] Such statements are devoid of factual content. Conversely, synthetic statements are those in which meaning is not contained within its very definition. The verification of such statements only takes place when they are experienced by our senses and therefore become fact.

Positivists today tend to be less enthusiastic about some of the epistemology's earlier assumptions. Acknowledging that its claims to objectivity and accuracy rest on less secure foundations than once believed, an element of doubt appears in the research of modern proponents who now tend to deal in degrees of probability and partial objectivity. Though its claims may have been reduced by this more modest approach, positivism still emphasises the role of empiricism, a unity of the sciences, and the ability to discover meaning from objects.[7]

Having examined what has traditionally been considered positivism and what is today considered positivist, this essay will now turn its attention to its shortcomings and will explain why it does not really 'work'. Though this essay is concerned with positivism's shortcomings with particular reference to the social sciences, there have been several criticisms of the wider positivist movement over the years which call into question its value to the social sciences.

The first – and perhaps most fundamental – flaw of positivism is its claim to certainty. As Crotty says, 'articulating scientific knowledge is one thing; claiming that scientific knowledge is utterly objective and that only scientific knowledge is valid, certain and accurate is another'.[8] This was dealt a blow by the works of Heisenberg and Bohr. Both worked on quantum theory and claimed that it was impossible to accurately determine certain qualities of subatomic particles, and that the observation of particles alters them. This calls into question both the ability to determine accurate information and the independence of a researcher from a subject. For Heisenberg this was an epistemological matter: 'in pointing to science's inability to determine subatomic dynamics with accuracy, he locates this limitation in the very way which we humans know what we know'.[9] Bohr disagreed, feeling that this was an ontological issue and that it related to the nature of subatomic particles, rather than the way in which people think about them. Regardless of the conclusions, the research had the effect of shaking the confidence of positivism and its claims to accuracy.

This uncertainty in the confidence positivism exuded was echoed in further criticisms from Popper in what became known as post-positivism. Unconvinced by the logic of scientific discovery and the synthetic statements of the Vienna Circle, he argued that 'every scientific statement must remain *tentative for ever*'.[10]His main issue lay with the role positivism ascribed to induction in scientific method. For Popper, the belief that universal laws could be established through repeatedly experiencing an event was an illogical one. Simply because something has been seen before is not to say that it is an ahistorical truth and that it will continue to be so forever. Therefore, regardless of empiricism and objectivity, 'a non-empirical logical principle remains intrinsic to scientific method'.[11]

Quine argued a further weakness of positivism lies in the discrepancy between the theory and practice of the scientific method. The traditional positivist belief in objectivity does not acknowledge Quine's argument that any sensory experience must be 'mediated by the concepts we use to analyse it', and as such, 'there is no way of classifying, or even describing, experience without interpreting it'.[12] This degree of interpretation of data by a researcher can result in a bias towards a particular conclusion, with certain results which fail to fit currently held theories being dismissed as anomalous or even completely ignored. This problem was developed further by Kuhn who argues that science tends to be dominated by a single paradigm which will limit the types of questions researchers will ask and the way in which they interpret their results. Contrary to the positivist claim to objectivity, the researcher is unable to become detached from their subject and approach it without prejudice. Observations which do not fit existing theories will therefore be discarded as incorrect until empirical observations become sufficient for a 'paradigm shift' to occur. After that the process will begin again.

Perhaps positivism's greatest shortcoming with particular reference to the social sciences is in its failure to

distinguish between the natural and social worlds. The insistence that there is unanimity in the sciences amongst the positivists does not take into consideration three important distinctions between the natural and social sciences which Marsh and Furlong identify. First, social structures do not exist independently of the activities which they shape or are the product of. A frequently cited example is that of marriage, which is both a social institution as well as a lived experience. That this is a lived experience will alter an agents' perception of it. This in turn will affect the way in which an agent interacts with it and will, therefore, ultimately change the institution itself. Second, social structures do not exist independently of the agents' views; they reflect upon the institutions to which they belong and alter their behaviour accordingly. Such a process does not take place in the natural world. Third, social structures will be shaped by the actions of agents and will therefore change depending on a range of factors, including time and location.[13] The failure to identify and respond to these clear differences between the social and natural worlds is perhaps positivism's greatest failure with regard to the social sciences.

At first glance, the appeal of using positivism in the social sciences is obvious. It promises to provide the assurances and certainties that the natural sciences apparently enjoy to situations which are often incredibly complex. As this essay has shown, however, such confidence is often misplaced both in relation to the social *and* natural sciences. Rather than take issue with what positivism sets out to do, the problem is the privileged position in scientific findings are held. Given the uncertainties that competing epistemologies have presented with regards to the philosophy of science it would seem somewhat naive to believe that any approach can offer the truly definitive knowledge that positivism claims to. Though modern positivists may now shy away from the overarching claims originally made by the likes of Comte and the Vienna Circle, there still exist a number of issues which cannot be ignored when trying to offer claims to objective knowledge of the phenomena with which the social sciences concern themselves.

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[1] Giddens (1977), p. 3.

[2] Crotty (2003), p. 21.

[3] Zammito (2004), p. 6-8.

[4] Ibid., p. 8-9.

[5] Comte in Crotty, p. 22.

[6] For example, the statement that 'all unmarried men are bachelors'.

[7] Marsh and Furlong in Marsh and Stoker (2002), pp. 22-3.

[8] Crotty (2003), p. 29.

[9] Crotty, p. 30.

[10] Popper (1959), p. 280.

[11] Crotty (2003), p. 32.

[12] Marsh and Stoker (2002), p. 23

[13] Ibid., p. 24.

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