SAINT SOCRATES

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Western philosophers have canonized Socrates (470-399 BC) as their patron saint, despite problems with his interrogatory method. In this essay I clarify Socrates' method, then contrast it with that more scientific ancient Greeks, like Aristotle, Democritus, Archimedes, and Hippocrates.

SOCRATES' METHOD

In early fourth century BC Socrates would often stop Athenians on the street and ask them to precisely define complex social and moral concepts like virtue, law, and knowledge. But, in contrast to other ancient Greek thinkers, Socrates was not interested in empirically testing their answers, or advancing knowledge of the world. Also, his method was more mathematical than empirical. Furthermore, Socrates' questions are so aggressive that Meno complains "I do not know how to answer you, [for] "my soul and my tongue are really torpid" (*Meno*, 80, cf. 71, 73, 89f, 96f), a good description of the effect of Socrates' inquisitorial method on people. Other Greeks also noted Socrates' aggressive method. Xenophon for instance said Socrates "appears ill-mannered, disputatious, and tactless" (Guthrie *Socrates*. 21). He also offered four reasons why Socrates never discussed nature: ancient Greek scientists did not agree on basic points; natural was of no practical use; studying nature led on to neglect human affairs, and, displeases the gods! (Guthrie, 100) So it is not surprising that, for instance Strepsiades in Aristophanes' the *Clouds*, calls Socrates' method "learned tongue-twisting" (I. 790). So he complains, "Oh, whenever you fall into perplexity, if someone would throw me an abstractional intellection instead of a sheepskin" (I. 730).

Such comments are evidence that Socrates' aggressive interrogations did not advance knowledge. That was also obvious from people's inadequate responses to his questions. In fact Socrates was aware that his aggressive questions caused "fierce and bitter indignation" (Apology 21; cf 26, 28; 33, 38). But this did not bother him. On the contrary, it confirmed his view that Athenians were lacking in moral knowledge. Indeed, in the Meno Meno also asks Socrates how good men come to exist, but Socrates does not answer his question (Meno, 96). Instead he says he doesn't teach, but only asks questions (Meno 80). So he poses several questions to Meno: what is virtue, how is it known. In response Socrates makes the highly disputable claims it is recollected by the soul, from its life before being born and embodied (Meno, 77). But this is an untestable metaphysical claim, not an empirically testable hypothesis. So Socrates method of inquiry is not scientific. He does not for instance, seriously entertain the likelihood that people learn to moral values from family, friends, and others as they grow up. That how we are socialized and educated when young, affects how good we are as adults; but this is a complex process, not a matter of simplistic definition or geometrical reasoning. In effect Socrates was only seeking evidence that supported his assumption that virtue is a form of moral knowledge, rather than test his hypothesis—a clear matter of confirmation bias.

Socrates did not for instance, entertain the possibility that we learn to be good as we grow up, from for instance family, friends, and other people, and that how we are socialized affects how good we

become, as adults, or but this is a complex social process, not the much simpler matter of abstract verbal definitions. That was likely because Socrates' was so focused on precisely defining such, terms. So the Socratic method is clearly one of questions about the precise meaning of complex, ambiguous social and cognitive concepts. It is not an inquiry into empirically testable hypotheses about society, morality, or the world. So it is not a scientific method.

Moreover, Socrates seems to have assumed correct definitions implied moral knowledge, which confirmed his idea that moral knowledge leads to virtuous behavior. That helps explain why his intelligent method of asking people to precisely define social and moral concepts, did not also lead to empirically tests of their ideas. Another problem is that Socrates' method was to ask people to define abstract concepts. So, unlike many other ancient Greek thinkers, Socrates was clearly uninterested in empirically testing those ideas. Instead his inquisitorial method focused on defining social and moral concepts. It is more like geometry than science. So Socrates' aggressive inquisitorial method was not a *scientific* method. Indeed it was often an obstacle to answering his questions, speak less advancing knowledge of the world.

Socrates also seems to have assumed, without evidence, that that virtue was a skill (sophia) involving technical expertise, like gymnastics, horsemanship, music, or a craft like carpentry and medicine (*Meno* 93?). And people can learn those crafts and skills. That *sophia* in Greek means skill, as well as wisdom, implied learning the skill of virtuous behaviour made people wise. Indeed, he also claimed that politics is a skilled craft. p. 38; Republic, 343; Meno 90f). But Athenian poets, doctors, craftsmen, rhetoricians, and sophists charged fees for their skilled services and for teaching others their craft. But Socrates argued they should not seek payment for their services; and, he added, businessmen are dishonest (Republic, 343, 345?; Meno, 90f). But architects, engineers, physicians and other experts used their skills to benefit their clients. So they should benefit from the practice of their craft. Socrates also ignored the fact that they needed an income to survive (Guthrie? The Sophists. 1979; p. 38); for, unlike Socrates, most ancient Greek poets, doctors, craftsmen, rhetoricians, and sophists were not rich. So they weren't able to spend their time asking others questions about complex moral concepts. On the contrary, they needed an income to survive. In contrast Socrates didn't need to work for a living, for he had inherited an estate from his father (Guthrie, ?). So he was affluent enough to spend his day on the streets asking people questions without being paid for his services. His criticism of sophists for seeking payment for their services therefore betrayed a significant lack of understanding the economic realities of life in Athens; not to mention a degree of hypocrisy. This undermines the credibility of Socrates' criticism of craftsmen, sophists and others for accepting payments for their services.

Building on Socrates' abstract geometric method of inquiry, Plato developed his theory of mathematical ideas as the essence of things. So in the *Republic* he claimed mathematics is the highest science. It is therefore no surprise that Plato claimed geometry is the highest science, or that he did not subject ideas to empirical test. Instead he saw those geometrical ideas as open to diagrammatic explanation. Plato's approach echoed Epicharmus' view that "men have great need of calculation and number. We live by calculation and number" (fr. 56; Freeman, p. 39). Plato also said that dialectic, or clarifying and testing one's underlying assumptions, opened the way for the vision of the Good (*Republic*, 502-09). In effect Plato generalized Socrates' geometrical approach to defining virtue, knowledge, and other abstract terms.

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At his trial Socrates said there was nothing greater than discussing human virtue (excellence) every day. A claim that was clearly a rationalization of his method; but Socrates never tested, speak less proved, its validity. In fact he was probably wrong, for *practicing* virtue is generally agreed to be better than merely talking about it. Most people respect good actions much more than nice words. So Socrates' belief that the "unexamined life is not worth living" is also disputable (Apology, 38), for several reasons. First it is better to live a good life than examine it. Second, people have different ideas about examining one's life. Certainly it involves more than posing aggressive questions about social and moral concepts to people on the streets, and never answering them. Furthermore, one should empirically test different answers to a question, to see which are better than others, eg., in terms of describing the phenomena in question. Moreover, one should open all answers to empirical test, like many of. But, apart from verbal definition, Socrates did not ask people to put the ideas he discussed with them to any reality test. Defining words, need one say, is not describing reality. At his trial Socrates also claimed the "unexamined life is not worth living" adding that there is no greater good than discussing human virtue (Apology, 38). Both claims are not only disputable, and empirically testable. Furthermore, empirical tests would tell us practicing virtue is better than talking about it. And it inquiry would also show that Socrates' aggressive questions usually did not advance knowledge of the matter in question.

Finally, Socrates accepted the jury's verdict, saying "You must do whatever your state and your country tell you to do, or persuade them their commands are unjust", for, otherwise, he claimed, the state cannot last (Plato, Crito, xii, p. 60?). That statement is highly debatable, for states often command people to do unjust things, commands one should not obey. Nor is it clear that Socrates was really interested in solving Athen's problems. On the contrary, his hyper-aggressive debating method was itself an obstacle to actually testing answers to his questions. Socrates accepted the Athenians verdict, for one should obey the law. Indeed, he said "You must do whatever your state and your country tell you to do, or you must persuade them that their commands are unjust"; otherwise, he argued, the state cannot last.¹ But both his claims are problematic, and open to empirical test, especially in a democracy like Athens. Plato clearly interpreted his approach as geometrical, a search for mathematical ideas. But, Socrates' questions were usually about what people know and believe about nature, society and the gods, his is an empirically testable mode of inquiry. Unlike most other ancient Greek thinkers, Socrates was not interested in testing his methods or advancing knowledge of his world. His was not therefore a scientific method. Moreover, Socrates' prophecy at the end of the *Apology* that Athenians will be punished after his death, was wrong. For Athenian democracy lasted and even survived Phillip of Macedon's invasion of Greece; for he maintained the Greek cities as part of his empire.

ARISTOTLE, ARCHIMEDES, AND HIPPOCRATES

In contrast to Plato and Socrates Aristotle, Archimedes, and Hippocrates all proposed empirically testable methods of inquiry. Aristotle for instance, rejected Socrates' abstract interrogatory method. Moral notions like virtue, friendship, and justice, along with rhetoric, poetry, and social ideas, Aristotle noted, are ambiguous, often disputed, notions, unlike physical and mathematical concepts. and he recognized there are different crafts and sciences; but, he argued, "The same degree of accuracy should not be demanded" in all inquiries and crafts (*Ethics* I.3; Bambrough, p. 287). So, he claimed "Ethics will be adequate if we make it as

¹ Plato, *Crito*, xii, p. 60.

precise as the subject allows." So, instead of demanding mathematical precision in all forms of knowledge, as Plato and Socrates did, Aristotle recognized the evident fact that there are different kinds knowledges vary, with different degrees of certainty and precision. In addition Aristotle often began his study of a subject by surveying the opinions of others on the matter under study. In contrast to the abstract mathematical method of Plato and Socrates aggressive questions, Aristotle's method was open to empirical test and helped advance knowledge of the world. As was that of Archimedes and Hippocrates. Archimedes did original work on geometry, optics, hydrostatics, astronomy and engineering (Lloyd, 40f). Indeed he claimed that mechanics helped one investigate problems in mathematics. He also proposed a geometric theorem on the area and circumference of a circle. And he invented an arithmetics that enabled one to count up to 80 trillion. Finally Archimedes showed the weight of a solid placed in a fluid, will equal that of the fluid it disperses (Lloyd, 40f). And Hippocrates' key maxim, Do no harm, is one of the very few moral norms that has been tested and proven by centuries of practice. Hippocrates also said doctors need to "read the signs" of the causes of patient's condition, and try to predict the effects of treatment. So doctors should learn from experience which methods work and which don't (Cuomo 14f). And experts should share their findings. Hippocrates also juxtaposed nature and medical technique, rather than opposing them. Unlike Socrates, other Greek thinkers were tested their methods, and advanced knowledge of the world.

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• For more information please contact Vincent di Norcia at: vdn@dinorcia.net