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The Axiomatic Method in Sociology

The written works of social theorists can be seen as examples of axiomatic method arguments in the world of social science. In fact, the method of rational proof of statements which has been engrained in our society since the Enlightenment can be seen throughout the academic disciplines. This paper will briefly outline some of the ways in which mathematicians and sociologists employ the axiomatic method in similar and different ways.

The axiomatic method is a way of proving the truth of a certain statement. The statement is said to be true if it follows logically from a number of statements that are in turn the logical result of other statements. At the very beginning of a proof by the axiomatic method there are certain special statements called axioms that are taken as true without justification. In order to make arguments by the axiomatic method, there must exist something that both the writer and audience agree upon to take as true without any particular justification. If there are no statements that the arguer and audience can both agree on, or at the very least accept for the sake of argument, then there is no way that the theorist can further his argument in the axiomatic method.

In math, axioms are generally basic statements about the elements of a system. For example, the first incidence axiom of geometry is a statement about lines and points, "for every two distinct points there exists a unique line incident on them." Similarly, what could be considered axioms in sociology are basic statements about the elements of sociology. So the axioms in sociology seem to be basic ideas about human nature. For

example, an axiom of Marxist thought could be that all humans inherently enjoy the act of creating products that they can use for their own livelihood.

In mathematical axiomatic systems, there are a few undefined terms, and the rest are defined carefully in the course of a well-outlined series of proofs in a particular axiomatic system. In sociology, the list of undefined terms is endless simply because the social world is so large and complex. Most theorists will only take the time to carefully define terms that they invent themselves or that they wish to use in a non-conventional way. For example, Marx talked at length about the concept of "alienation of labor." He defined this term carefully. For later Marxist scholars, the phrase "alienated labor" could be worked into their arguments without direct explanation because it was assumed that everyone had read Marx and was familiar with the definition he gave. This is similar to mathematical proofs, because within a particular proof a mathematician will rarely define all terms that he is using if they have been previously carefully defined.

Many theories of sociology are like the more advanced, less formal mathematical proofs. In these proofs, the audience is assumed to have some basic knowledge about the system and the ability to draw upon knowledge of past proofs to explain how certain terms are to be used. Similarly, in sociology, there appear to be many undefined terms, but these terms are mutually agreed upon by the social science community or defined carefully in previous work within the discipline. For example, Weber did not invent the term "rationalization," but he did carefully define and explore the term in many of his essays and books. Then when later Weberian theorists speak about a different but related topic, they will likely not define the term, but rather just use it in passing, assuming that their audience will be familiar with Weber's definition.

An axiomatic system in mathematics, such as incidence geometry, is comparable to a general area of social theory, such as modernization theory or structuralism. Within each of these social theories, there exist particular assumptions about human nature that are unique from other theories. For example, in modernization theory, it is assumed that individuals in underdeveloped countries desire to live in a society like the Western world and will accept the help of outside organizations to restructure their economy to that end. Structuralism, on the other hand, assumes that those same individuals in underdeveloped countries would prefer to have more autonomy over their own process of development, and would do better in the long run if they take a more isolationist approach to development.

In mathematics, the axioms from which the mathematician will be arguing a proof are always stated explicitly at some point in the proof. In sociology, this is generally not the case. Instead, the axioms of a social theory are generally implied, but not stated outright. Mathematical axioms are not argued or defended. They are simply mutually agreed upon as true by writer and reader. Similarly, in sociology, axiomatic statements about basic human nature are rarely argued or even mentioned.

In the rare case where the social theorist mentions his basic assumptions about human nature, they are usually described as “common sense” or obvious ideas. For example, It is acknowledged that perhaps some individuals may disagree with the very basic ideas about human nature that the sociologist is working from. However, these people are considered to be ignorant of true human experience or not observant enough to see the very obvious, simple facts of human behavior. These statements about human nature can still be considered as axioms, because they are never truly argued. Instead, the

social theorist simply asks the reader of the theory to look around and observe how people behave in "the real world." This is considered enough of an argument for the social theorist who attempts to articulate and defend his basic assumptions about people that his theory is based upon.

This is the most fundamental difference between the ways in which mathematicians and sociologists argue. In sociology, experience is as much of an indicator of truth as a conclusion reached by reasoning. If something occurs enough times in real life and can be documented by a sociologist, or observed by others, then it is considered to be true (or as close to true as anything can be in sociology). This is very different from the mathematic world where a particular phenomenon can been seen to occur multiple times without being considered true.

The repetition of a certain phenomenon would potentially be the starting point of an argument in mathematics, as it would make the mathematician who discovered it question whether it is an event that could be generalized more broadly to occur in all cases, or to always exist at least once in different conditions. For many sociologists on the other hand, the question would not be if the phenomenon would always occur, but rather why it occurs. The actual experience or observation of the phenomenon would be used as part of the argument. However, this is not to say that sociologists don't employ the axiomatic method of argument. The attempt to explain a behavior or experience will arise from the "axioms" or assumptions about human nature. However, the experience itself is taken to be "true" simply because it occurs.

While sociologists use the framework of the axiomatic method to make their arguments, it is a method better suited to the mathematical world, where it is simpler to

accept certain things as true without any justification. When sociologists base their entire theories of societies on what they believe to be the basic facts of human nature, it is harder for their audience to accept these things without explanation. Everyone, as a member of the human race, believes that they know what is truly human nature, and they have the personal experiences to back up that assumption. Therefore, one of the best methods of argument for a sociologist is to counter those personal experiences with experiences that he or she has documented in research. In mathematics, because the audience for a particular proof may not have thought about the proposition before, and because it is simpler to accept axioms about lines and points without justification, proof by the axiomatic method is a more realistic argument than it is for sociology.