

**COVENANT UNIVERSITY  
NIGERIA**

*TUTORIAL KIT  
OMEGA SEMESTER*

**PROGRAMME: SOCIOLOGY**

**COURSE: SOC 123**

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## **SOC123: ELEMENTS OF SCIENTIFIC THOUGHT II**

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### **Question1.**

Examine the problematic aspect of sociology in its quest towards scientific explanation of social problems.

### Question 2

Is science objective or subjective?

### Question 3

Write short note on Karl Popper's method of discovery.

### Question 4.

Discuss Thomas Khun subjectivity option to scientific inquiry.

### Question 5

What is objectivity?

### Question 6

Why is objectivity required in the field of scientific inquiry?

### Question 7

Present a comprehensive essay on what objectivity entails in the social sciences.

### Question 8

Distinguish between observational law and theoretical law.

### Question 9

In the conduct of scientific study, how do researchers guarantee objective?

### Question 10.

What is the relationship between inductive and deductive method

Q 11. What constitute value judgement in sociological studies?

Q 12. Is scientific objectivity possible?

Q 13. Present a short essay on Alvin Gouldner's position on value judgement in Sociology.

Q 14. Contrast between the argument of Max Weber and Hesse on value free Sociology.

Q 15. Explain Max Weber contribution to scientific thought.

Q 16. Present the argument of Karl Marx on the scientific status of Sociology.

Q 17. Analyze August Comte's postulation on the subject matter of sociology and scientific inquiry.

Q 18. What is inductive method?

Q 19. What is deductive method?

Q 20. Compare and contrast Weberian and Marxian scientific thought.

## ANSWERS

### Question 1.

- On the scientific explanation in sociology, Mill, Easton and Hempel, advocate methodological unity of all empirical sciences. However, Lessnoff queries this unity on the grounds that the study of people and their actions is radically different from the study of mindless matter. While the empiricists favour the application of scientific method to the study of both nature and man, several others argue that since the phenomena of nature and of human activity are fundamentally different, primarily because of the dimension of 'meaning' in human action their study must be fundamentally different.
- The establishment of uniformity in the social sciences is hampered by difficulty in ascertaining complete precision in the prediction of social phenomenon especially that affecting the real location of derivative uniformities.
- The science of sociology falls far short of the standard of exactness already attained in the pure sciences. Attaining scientific status requires sociology to at least be conversant with how individual will think, feel or act throughout life with the same certainty with which astronomy enables us predict the places and occultation of the heavenly bodies (Mill, 1843).

### Question 2

Science in the context of sociology is both objective and largely subjective for the following reasons:

- ▶ Sociological science is objective due to its affinity with and adoption of scientific method of inquiry. Scientific knowledge emerges through mutual

criticism and testing the products of criticism (ideas) against social realities. Scientific discipline aims to explain why something happens.

- ▶ Sociology proceeds through the gathering of facts based on observation of events. It then proceeds by making generalizations or hypothesis often proven through inductive (data collection, analysis and development of theory) and deductive methods. Sociologists in making generalization, look for patterns, sequence or recurring characteristics or events

Sociology is subjective because its limitation to meet scientific standard of objectivity. There must be a realization of the difficulties involved in severing between scientist's thinking, feeling and the scientific facts they arrived at and this in a way may seem impossible or at best problematic. This is quite important since one cannot with certainty determine when scientist thinking and feelings are likely to crisscross into the facts he or she claims to be purely objective.

#### Question 3

- In his method of discovery and supporting the objectivity of science, Popper, said there is no logical method of arriving at hypotheses in the social or other research. In scientific inquiry, what seems important is not how hypotheses are raised but on how they are tested. The procedural, analytical and the reporting methods involving hypothesis testing guarantees scientific objectivity. Process of discovering hypotheses are not rational and are a matter of both social and psychological investigation of the events that birthed the hypotheses. Scientists are expected to put forward their statements or system of statement (hypothesis) and test them step by step. They are expected to construct hypotheses, or system of theories empirically and test them against experience or experiments. This is basically the logic of scientific discovery or the logic of knowledge, scientists are to give a logical analysis of the procedures utilized to arrive at a result, that is, to analyze the methods of empirical science.

#### Question 4.

Thomas Kuhn (1922), emphasizes the role of common interest in shaping the things that are believed about the world. Scientists in his view are not passive but consciously determining what to study, how to study and when to study a phenomenon. Ideas in the world of science according to Kuhn are influenced by the beliefs and interests of the scientific community. Kuhn emphasized the role of existing theories in investigating scientific related problems. In his view, theory is

a mirror upon which the current study borrows inspiration and to define the problem to be solved. Scientists only study and test his/her hypotheses in the light of existing theoretical context and if it fails the test, he disregards his initial position and not necessarily throw away an existing theory or body of work. The scientist only put his/her hypotheses or statement within the existing corpus of universally accepted scientific knowledge and engages the testing of such hypotheses or statement through step by step processes.

#### Question 5

Objectivity has been conceived as the ideal of all inquiry and a requirement of any inquiry which claims to be scientific. Science in this regard is a systematic public enterprise, controlled by logic and empirical fact, whose purpose is to formulate the truth about the natural world (Scheffler, 1967). Objectivity is closely tied to the general notion of rationality (condition of being logical: the condition in which values, beliefs, and techniques are believed to be based on logical, explicable principles). resting on the premise of demand for relevant reason and acknowledge control by principle.

#### Question 6

Discussions on objectivity often borrows from the height of exactitude attained in the natural sciences and thus make comparison if such objectivity can be attained and produce the same results in other areas of research inquiries such as that of the social sciences (humanities). The high value to objectivity in inquiry generally is partly due to the acknowledged success of the natural sciences by comparison with other inquiries. A fundamental features of sciences is its ideal of objectivity, an ideal that subjects all scientific statements to the test of independent and impartial criteria, recognizing no authority of persons in the realm of cognition. In objectivity, scientists make efforts to meet universal standard independent of the researcher, done to satisfy factual requirements whose fulfillment cannot be guaranteed in advance.

#### Question 7

Objectivity involves the followings:

Scientific spirit to acknowledge from the onset that event placed under focus may turn-out to be wrong. Avoidance of dogmatism, ill given mind towards the outcome of proof. Evidence assumes the ultimate deciding factor in the sciences.

Scientists continually linked with several others in the scientific field, despite differences in location or opinion still gives room to common discourse and access to shared world. It is categorically for subjecting these issues continuously to the joint test of theoretical coherence and observational fidelity.

Openness to criticisms from any quarter and to acquire impersonal regard for the judgement of others.

Subjection to the control by reference to independent checks necessitating impartiality and detachment. What is central in scientific pursuit is the recognition that scientist's area of concern regarding any social event is placed under the scrutiny of others and forms the fundamental of scientific game. This helps to channel critique and facilitate evaluation rather than to generate results or discoveries by routine.

Question 8

**Observational laws** are made by extracting from data that are accessible through the use of common senses. This results in observational laws that are couched in the language of observation and make references to perceived things and processes.

**Theoretical laws** on the other hand are expressed in a more abstract form or idiom and typically postulates unobservable elements and functions; unlike observational laws, they cannot be subjected to the test of direct inspection or experiments. Theoretical law contains a lot of rigid concepts or variables that may in most cases not subjected to direct test (example, Anomie, Durkheim, Psycho-analysis of Freud, Alienation, Marx etc).

Question 9

Objectivity is guaranteed in the following ways;

Putting forward an hypothesis in a scientific spirit.

Supposition from the onset that such may be wrong, by independent tests to which the researcher is prepared to submit his/her proposal.

Initial supposition that present hypothesis is not to be prejudged as correct during the process of testing (test should be conducted with an open mind).

The acknowledgement that disagreement with respect to any proposal is no bar to further communication, nor indeed to agreement on the test itself (there are rooms for further inquiries irrespective of outcome).

So long as testing only aims at appealing to facts disclosed in common observation of things, the researcher suppose the same thing can be observed from different perspectives, and consensus on observation reached without presupposing agreement on relevant theory.

Agreement with differences in opinion on observed phenomenon and the acknowledgement of vast majority of scientists who have shared access to the world being investigated.

Methodological publicity of science presupposes access by different persons who may speak intelligibly about the phenomenon under examination.

Question 10.

- Although induction and deduction are traditionally considered alternatives to each other, it is better to note that the similarities between both are much

greater than the differences. Before assessing to what extent induction and deduction are similar or different, it is first important to consider just what kind of entities induction and deduction are. Although not always made explicit by researchers, there are two views on this issue, namely, the “problem view” and the “process view.”

- According to the problem view, induction and deduction refer to particular types of reasoning problems. In this regard, an observation of a problem on paper uniquely determines if it is inductive type problem or deductive type problem. In contrast, according to the process view, the locus of the question is not on the paper but in the head. That is, induction and deduction refer to psychological processes. For a given problem, it may be possible to answer it using induction processes or deduction processes.