

## Unit 3

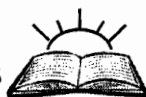
# Diverse Logic of Theory Building

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### Learning Objectives



It is expected that after reading Unit 3 you will be able to answer the following questions.

- ❖ What do we mean by theory?
- ❖ What are the constituents of theory?
- ❖ Why do we need theory?
- ❖ How do we build theory?
- ❖ What is the use and scope of social theory?
- ❖ How do values held by researchers affect theory building?

## 3.1 Introduction

After discussing in Unit 2 the basic logic of understanding social reality around us in terms of empirical investigation, we will discuss in Unit 3 why and how sociologists arrange in fairly compact theories their propositions about the social world.

Before reading Unit 3, it would be well to appreciate that emphasis on theoretical formulations and methodological rigor in empirical research go hand in hand and do not in any way pose any problem of ascendance of one over the other. Your logic of theory building is your asset to carry out a useful empirical investigation and vice versa, a methodologically sound social research leads to growth of verifiable and valid outcomes in terms of their theoretical significance.

In the light of the above clarification, it makes more sense to read Unit

3, which elaborates the process of theory building, that is, deals with hypothesis, description and experimentation. In addition, it discusses the use and scope of social theory and the issue of social scientists' values affecting theory building. As in Units 1 and 2, discussions in Unit 3 also follow the pattern of informal and narrative style with examples from sociological writings.

## 3.2 Concern with Theory in Sociology

Theory refers to knowledge arranged so that the facts are subsumed under general principles. The difference between commonsensical knowledge and scientific knowledge is that the latter is systematised and classified. But only classification does not make any knowledge scientific, what really makes it scientific is that while commonsensical knowledge is satisfied most often with the desired effects, science looks into the causes of a phenomenon. It is the task of theory to organise such causal relationships into observable repetitive or classifiable regularities so that one can make general observations that encompass diverse but related phenomena and explain them by not individual and specific relationships only but by a higher and abstracted general relationship.

To look for causes underlying any observable phenomenon is the first task of science for otherwise as often happens with respect to commonsense, people expect or demand contradictory goals without realising that they are doing so. Establishing the correct causal relationship between facts is followed by bringing together diverse facts within a single frame of causality; the process by which this is done is called theory building for the resulting relationship is often called a theory.

In other words, you can say that there are three constituents or properties of theory, namely, i) explanation, ii) prediction and iii) verification. The systematically interrelated sociological propositions, which hold in different contexts, comprise theories. You can put to test each of these propositions as to how well it conforms to data and how well in relation to each other the propositions account for the outcomes in a given setting. If such a prediction is possible, you can say that the result has been explained in terms of known propositions. While verifying the sociological propositions, one needs to look for a logical relationship as well as empirical relationship. As you can make out, explanation, predictability and verification in sociological theory building are closely interrelated elements. We shall now discuss them in detail.

Before we go on to the discussion, it may be a good idea to carry out one Reflection and Action exercise right in the beginning of the unit in order to fully appreciate what is meant when we suggest that to look for causes underlying any observable phenomenon is the first task of a social scientist.

### Reflection and Action 3.1

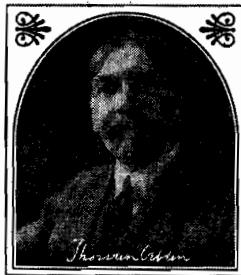
We have given below an example of the underlying cause of overcrowding in cities in relation to a commonly held perception of city dwellers. You need to write on a separate sheet of paper another similar example based on your own experience.

#### The Example

One example is that of city dwellers, living in cities and often complaining of overflowing slums containing migrants from rural areas. They also complain of inadequate electricity but do not realise that it is largely to fulfill the exorbitant requirements for power of big cities that mega hydroelectric projects are built and these projects often displace large volumes of populations that have no recourse but to throng the slums in the cities, thereby increasing the burden further on the resources of the cities.

As said earlier, we look at theory as 'an account of the world which goes beyond what we can see and measure. It embraces a set of interrelated definitions and relationships that organises our concepts of and understanding of the empirical world in a systematic way' (Oxford Dictionary of Sociology 1998: 666). In this sense, we can agree with Waters (1994: 3), who says that social theory needs to be abstract and separable from the social practices that the theory has addressed. Such a theory needs to also focus on a specific thematic argument that runs through the set of propositions providing them coherence and force. Next, the theory has to be logically consistent and explanatory, that is, it needs to have a thesis about social phenomena to account for their form or existence. Further the theory is to be general enough to account for all instances of the phenomena it proposes to explain. Also the theory cannot be reduced to the explanations informants or participants themselves provide to explain their behavior. Finally, the theory needs to be substantively valid, that is, it is to be consistent with what is already known about the social world by its participants and by the social scientists, including other sociologists. This means that it should be possible to link the theory to other bodies of knowledge.

The best way to test the validity or truth of a theory is to test its



Thorstein Veblen  
(1857-1929)

predictability. For example, Thorstein Veblen (1857-1929) had collected together some properties of the elite in society, designated by him as the theory of the leisure class (see Veblen 1899). The validity of this theory lies in how often and how predictably will the persons belonging to the elite class exhibit the properties so designated.

The sciences by definition need to be predictive on the basis of their theories. In the natural or so-called 'pure' sciences, there is a set limit on the probable range of failure of predictability of a theory before it is rejected. In the social sciences, theories rarely have that capacity for predictability yet some degree of ascertaining the truth of a situation has to be assigned to any

statement for it to take on the mantle of a theory.

It is now time to complete Reflection and Action 3.2 for looking into the predictability capacity of theories in sociology.

### Reflection and Action 3.2

We are giving below an example of theory that owing to other variables has the limited capacity for predictability. Identify similar examples from the theories you have learnt in MSO 001. Compare your examples with those of other students of M A Sociology at your Study Center and select five best examples of such theories and discuss them in terms of their capacity for predictability and presence of other variables that inhibit large-scale prediction. Select a panel of four to five learners to present and discuss their examples to show the difference between commonly held views and scientifically analysed reasons behind a phenomenon.

#### The Example

One example is that of exchange theory, which states that the principle of exchange or equivalence of transaction of 'give and take' underlies much of human behavior, including marriage and nurturance of children. However other variables such as power and altruism intervene to explain situations that recurrently digress from the principle of equivalence. Moreover it is also recognised that human relationships operate on the basis of non-material considerations such as prestige and honor in determining dimensions of exchange; like the flow of goods from persons of lower to higher status. In the social sciences we find that because of the complexity of human life and behavior, the situations of predictability are intervened by a large number of factors. A one-to-one causality is rare in the social sciences though it is possible in mathematical sciences and natural sciences.

\*The Academic Counselor of MA Sociology programme is requested to organise a recording of the panel discussion among the learners, in collaboration with the IGNOU Regional Center in your region.

After completing the section on concern of theory in sociology, let us look at building blocks or basic elements of theories.

## 3.3 Concepts: Basic Elements of Theories

Whenever we are talking in terms of theory there is a necessity to use a kind of vocabulary that is often specific to a particular discipline and contains terms that we call concepts. These concepts are nothing but short hand versions of a large range of phenomena that may be brought under one heading to describe something. Concepts are basic elements of theories and we develop them through a process of definition. Theories basically connect concepts to one another in a logical manner. Let us take for example the concept of culture. When a social scientist uses the term 'culture' in any written or oral discourse, the meaning of the term is roughly comprehensible to anyone who has knowledge of the discipline. Each concept is usually accompanied by a standardised description called its definition.

In the natural sciences such definitions are very precise but in the social sciences they may not be so. Anyone who has struggled with the definition of culture in the first year of joining sociology will know how difficult it is to find a one-line definition of culture. Even today, most persons may not agree on any definition whatsoever. Yet most social scientists would have a fairly good idea of what is meant when the term culture is used. Thus all scientific disciplines have their own terminology of concepts popularly known as the scientific jargon.

The concepts are abstractions that are not made randomly but by a recording of structural properties rigorously selected from the visible traits exhibited by the phenomenon under study. Although such selection can be made on the basis of statistics, the ultimate construct is made intuitively or deductively. As far as possible it is ensured that the properties selected are of universal occurrence.

Let us once again take the example of the concept of culture. It is universally recognised that although the capacity for culture building may be a genetic mechanism, culture by itself is a learnt behavior as proven by the example of children who have been deprived of being nurtured by human adults. This learnt behavior is transmitted over generations but is also capable of being transferred to other groups and transformed over a period of time. The traits, which often go into the definition of the concept of culture, have been abstracted from actual observations and recording of human groups and their behavior. Also, it is quite likely that certain properties considered to be true at one point of time may be given up or modified when fresh evidence comes up. For example, the proposition that only humans are capable of culture is being modified by fresh research on non-human species.

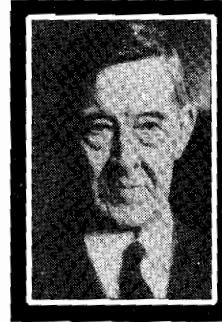
Propositions in all sciences are always open to scrutiny and continued research in a scientific manner means that we keep testing earlier statements for their validity. This is why science is recognised as a never-ending process and that is why in the social sciences few concepts achieve the status of universal and timeless truths as in mathematics. Statement of absolute validity, like two plus two is equal to four, is rarely possible in the social sciences. There is always recognised a difference between "theories" based on constructs and "experimental laws" based on facts. In this sense, the social sciences are by and large theoretical and not experimental. All the same we build theories in the social sciences. The question arises, why do we need theories? Let us try to answer the question.

### **3.4 Why Do We Need Theory?**

The need for theory lies first of all in that theories help us to put order in a bewildering range of phenomena that might seem unrelated. But with the help of theory, we may summarise in terms of a few principles the

nature of the relationship between them. The more abstract a theory, meaning the more generalised a theory, the wider is its application but the further away it is from actual situations. You may say there are two types of theory, namely i) formal, and ii) substantive.

Formal theory is most inclusive and basic in the sense that it aims to isolate a single set of principles, which are the foundation for social life. Through these principles you can explain every social phenomenon. Its paradigms give birth to grand theories. Evolutionary theory is an example of a grand theory, which makes some broad generalisations regarding the nature of society and the nature of transformations that one expects to see, but it would not be very predictive when applied to everyday realities of life except in a very broad sense. The last significant attempt to write grand theory was made by Sorokin (1962). His theory on social and cultural change attempts to establish two basic law-like generalisations (for details of Sorokin's grand theory see Zetterberg 1965: 15-16).



Pitrim Sorokin  
(1910-2003)

As a reaction to writing grand theory, Pitrim Sorokin's student, Robert K. Merton (1957: 5-10), formulated theories of middle range. You can say that these are miniature theories or partial theories. Such theories endeavor to explain specific but generally branching out events or specified types of the social process. When we designate a theory partial or middle range or miniature, we mean that this theory does not contradict other accepted theories. Examples of such middle range theories are Pareto's theory of elites (see Finer 1966), Murdock's (1975) theory of kinship structures, Homan's (1950) theory of elementary social behavior.



Robert K. Merton  
(1910-2003)

But whether grand or middle range, a theory is a necessity for it simplifies the task of dealing with reality. A theory provides a means for dealing with reality in terms of providing neat and compact explanations that can be set into a known explanatory framework. In this context you may like to quote Simmel (1898: 829-836)), who said that "...we shall discover the laws of social forms only by collecting such societary phenomena of the most diverse contents, and by ascertaining what is common to them in spite of their diversity". Simmel's (1858-1918) assumption is that sociology can discover a small number of propositions, which would be verifiable in diverse contexts. In this sense, you may say that the task of the sociological theorist is to discover general propositions. Such an effort generates



Georg Simmel  
(1858-1918)

systematically interrelated propositions. Only after generating such propositions can we test a theory. To test a theory, we need to check how well each proposition of the theory conforms to data (see below the discussion on hypothesis, description and experimentation). Interestingly, often the situation is the other way round and most of those engaged in social research collect data and look for theories to make sense of their data.

In fact the task of collecting empirical data often culminates in the



Leslie White  
(1900-1975)

scholar trying to make sense of the data in terms of available theories. If such a task is successfully accomplished, then the data stand explained. However, if the data refute or contradict the theory then they provide a basis for reformulation of the existing theory or a new theory altogether. For example neo-evolutionary theories such as that of Leslie White (1945, 1947 and 1959) were modifications on the evolutionary theory. The replacement of the evolutionary theory by the

functional theory was a refutation of the earlier theory and its replacement by another.

The second task of theory, apart from the first one of explaining reality, is to generate a hypothesis<sup>®</sup> that can be tested. We shall now discuss this process in detail as this helps all young researchers to initiate their research projects.

### 3.5 Hypothesis, Description and Experimentation

A theory by itself is an abstract proposition that cannot be tested. It is also true that a process of deduction can only construct a theory, even when it is based on inductive empirical data. What a theory does is to generate a hypothesis that can be tested. The reliability of a theory lies in the testability of its hypotheses. Skepticism regarding the evolutionary theory began when it was realised that the hypothesis generated by it, such as for example whether or not patriarchy precedes matriarchy, could not be proved empirically. Moreover the methodology used for proving these hypotheses were suspect. The closer the hypothesis generated by a theory comes to the reality, the better is the theory.

Not all research is directed towards hypothesis testing, as in the social sciences in particular there can be a descriptive research that seeks to explore hitherto unknown territories.

A hypothesis only posits a logical relationship between phenomena to be understood and is in itself not a description of reality, and may not correspond to every actual case on hand. For example, the hypothesis that urbanisation leads to disintegration of the joint family is only a logical relationship between a particular form of family and urbanisation

that seeks to state that whatever urbanisation stands for in terms of its very definition is antithetical to what the joint family stands for, so it is logical to presume that with greater urbanisation the joint families are likely to break up. But this is not a deterministic statement about all joint families actually breaking up. It merely wishes to state the reality that whatever values or states of mind that urbanisation fosters like individualism and competitiveness are at variance with the sentiments that bind families together.

The hypothesis is, in this sense, a deductive statement that needs to be proved inductively.

The various ways in which theories can be constructed depends on the type of questions asked and the basic assumptions or premises that are accepted as given truths in any situation. There are also no fixed rules or methods by which one enters into a scientific investigation and often methods have to be devised according to one's requirements. For example, the scholars who developed the Culture and Personality approach had to develop their own techniques such as collection of children's drawings, recording of dreams, administration of Rorschach ink-blot tests<sup>®</sup> and so on, methods that had not before been used in any sociological or anthropological fieldwork.

The two broad divisions of the logic of theory building in the social sciences is between those who consider the natural sciences as a model for building theory in the social sciences as well, that is to look for universal laws and invariant truths regarding society and human behavior. The other point of view denies the possibility of ever establishing such "truth" because of the creative and diverse nature of human beings. The latter point of view supports the idea that all observations regarding society and human behavior are contextualised in historically situated human groups and can never be universalised. However a modification of the first point of view is that the social sciences are as precise or non-precise as the natural sciences because even the propositions made by the latter often have limited application and are subject to modifications from time to time. In other words there is an attempt to review the definition of science itself.

A number of problems may be listed to provide an answer as to why the social sciences are not capable of furnishing universal laws of the experimental type. One of them is the difficulty faced by sociologists in carrying out a controlled experiment. Let us discuss this problem.

### **3.6 Controlled Experiment**

The first of this is the lack of the possibility of setting up of controlled experiments to test a hypothesis. A real controlled situation is one in which the scholar can manipulate the variables at will. For the social scientists ethical and moral constraints put a restriction on such



manipulations, but sometimes an attempt has been made to take ready-made situations that exhibit properties of controlled comparisons (see Reflection and Action 3.3).

### **Reflection and Action 3.3**

An example of a controlled comparison is the study by Epstein (1979) of two villages in South India. The following paragraph describes how Epstein used the methodology of comparing identical situations in every respect except for one variable.

#### **Description of the Controlled Comparison**

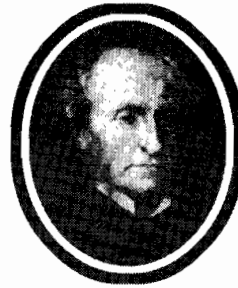
These two villages Wangala and Dalena were identical in terms of culture, social norms and structure of social relationships. Epstein's hypothesis was based upon the then popular structural-functional model that assumed interdependence between the various parts of the social structure. It was hypothesised that the introduction of outside technology would affect the economic dimension and thus upset the earlier harmonic interdependence between the various parts of the society. The two villages selected had different technological bases, one was a dry village depending solely upon rainfall for irrigation and the other had permanent sources of water from tanks and wells. With the introduction of water from the Krishnaraj Sagar Dam built in 1931, both villages underwent changes. The wet village, Wangala, strengthened its earlier forms of social structure, by the increased cash input from better irrigation facilities and the switch over to cash cropping. The increased economic input led to a continuation of earlier structural elements like caste, performance of elaborate rituals and reinforcing of the role of caste and village panchayats. But nothing new, not even electricity, was introduced into the village. The dry village, Dalena, underwent more radical transformations in its economic roles and relationships. While it could not switch to cash cropping, people underwent transformations to non- agricultural activities. People started going to the nearby town for jobs and education and the village became structurally different from what it was before. What Epstein is able to show in her research is that the same economic change, namely irrigation from a dam, can bring about drastically different results in two villages otherwise identical but having different resource bases. The two villages are comparable because they belong to the same region, same culture and had the same type of social structure to begin with. The outside source of change is also identical, the only variable that differed was technology.

#### **What are you expected to do?**

Read the example carefully and identify one more such controlled comparison in the social sciences. Write, on a separate sheet of paper, its description, similar to the above example, in order to highlight the hypothesis and the theoretical context employed to provide explanation(s) of the social phenomena under study. Try to look for a possible example(s) from the articles in the special issues of *Economic and Political Weekly* (15 June 1996) and *The Eastern Anthropologist* 53 (1-2) 2000.

This kind of methodology with ready-made situations of comparability, where two field-situations could be identified that were identical in every respect except for one variable was popular for a while. They followed what John Stuart Mill (1806-1873) had called the Method of Agreement or the Method of Differences, in which two situations were either unlike in all respects except one or were alike in all respects

except one. According to Mill (1830) such situations could never occur naturally or under unmonitored conditions and since they were a necessary condition for the stipulation of general laws, the social sciences could never aspire to do so. The criticism of Mill is that even under the most stringent experimental conditions such ideal conditions may not be achieved or cannot be achieved as some variables may be related in such a manner that one will automatically change if the other is varied.

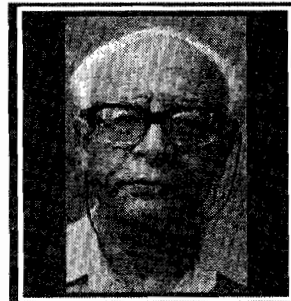


John Stuart Mill  
(1806-1873)

### 3.7 Designing an Experiment

The other kind of theory building process was the use of actual experimentation in the laboratory. Such methods are often commonly used in the fields of Psychology and even culture personality and socialisation and child rearing studies. Experiments entail comparison of what happens in the situation of the control group with what happens in the experimental group. "Control" in this context means holding one factor constant while others vary. However the obvious drawback is that not very many social situations can be reproduced under laboratory conditions. Sometimes the changes that occur in natural conditions are of far greater magnitude than those which can be produced artificially or the emotional content is far more intense in real life than under experimental conditions. The element of play-acting may also creep into such situations. In addition, it is possible to set up field laboratories where in real-life situations one can examine the variables, like in a classroom or factory.

But more often theory in the social sciences is directed towards viewing the effects of a certain phenomenon upon another or on society in general. Like a particular variable may be chosen, like dowry or building of a factory or the introduction of television into an area. Then the effects of the introduction of this variable upon the rest of society are studied. Other kind of studies may be directed towards the cause of a certain phenomenon rather than its effects. Like trying to ascertain the causes of female infanticide. The help of a hypothesis can set up such studies in two ways, either, where a certain relationship between the phenomenon to be studied and some other variable deemed to be causative is put forward. Or otherwise it may be a purely exploratory study where the field is being approached for the first time. The latter are often in the nature of pilot studies done prior to the setting up of a hypothesis. But they can also be full-length research of the exploratory descriptive type, for example, the *Remembered Village* by M.N. Srinivas (1976).



M N Srinivas  
(1916-2000)

### 3.8 How to Test a Hypothesis

For setting up hypothesis testing research we must first have a theory, because the nature of the proposed relationships is ultimately derived from theory. A theory provides the basic logic of the relationship between different phenomena. The hypotheses are generated to test the truth of these relationships and therefore the correctness of the logical process, namely, the theory that has generated them.

Every hypothesis contains a statement about the relationship between at least two phenomena; one of them is the phenomenon such as female infanticide that the researcher is trying to account for. The other is one that is thought to affect or bring about the phenomenon that one is trying to account for. The first one is called the dependent variable and the second one is called an independent variable.

For example if we put forward the hypothesis that illiteracy of mothers leads to female infanticide, then female infanticide is the dependent variable and the literacy level of mothers is the independent variable. To test the hypothesis one has to expose it to a situation that can show it to be false. If the hypothesis survives the effort to falsify, it then it is proved true. In the above example we can study the rate of female infanticide among a population of well-educated women. If the sample shows a significant rate of female infanticide that compares favorably with a corresponding sample of illiterate women, then the hypothesis is false. In other words the literacy of women is not a significant variable as far as female infanticide is concerned. If, on the other hand, the sample of educated women shows a significant drop in the incidence of female infanticide, then the hypothesis is tentatively proven.

In the above example one could rely on statistics to provide most of the base data. But not all social science variables are measured statistically, for that one has to measure by deductive processes and set up some criteria oneself or rely upon criteria provided by other studies.

Let us now do the exercise of Reflection and Action 3.4 to work out the links between the variables and theories. After the exercise, we will discuss the common methods of testing a hypothesis.

#### **Reflection and Action 3.4**

Take the example of the variable of Status of Women. There is a numerical measure for such a variable but one can measure by relying on the theoretical statements made by others and the observations one makes in the field or by eliciting responses to a set of questions, or more realistically by combining a number of techniques. For example, what determines the status of women would depend on what theory we are subscribing to.

#### **What are you expected to do?**

Work on the match in the following exercise to find out who (the follower of which theory) would emphasise which variables to determine the status of women.

Theory	Emphasis on
I) Marxist Feminist Theory	A) Sexuality, personal liberties, rights of choice, freedom of expression etc.
II) Radical Feminist Theory	B) The symbolic and ritual expressions.
III) Interpretative Theory	C) The economic variables such as income, inheritance of property, ownership patterns, etc.

### 3.9 Common Methods of Testing a Hypothesis

Here we discuss the following three common methods of testing the hypothesis.

#### i) Pre-testing of the post-testing paradigm

One common method of testing a hypothesis is by pre-testing of the post testing paradigm<sup>®</sup>. You may ask, what is a paradigm? For answer of the question, see Box 3.1.

#### Box 3.1 What is a Paradigm?

The dictionary meaning of paradigm is 'example', or 'pattern'. In social sciences we use the word, as explained by Ritzer (1983: 432), who said, "A paradigm is a fundamental image of the subject matter within a science. It serves to define what should be studied, what questions should be asked, how they should be asked, and what rules should be followed in interpreting the answers obtained. The paradigm is the broadest unit of consensus within a science and serves to differentiate one scientific community from another. It subsumes, defines and interrelates the exemplars, theories, and methods and instruments that exist within it."

To continue with our discussion of pre-testing, one simply studies the field prior to the introduction of a variable and after its introduction, let us say the study of a village after the building of a road or after an event like an election or epidemic. However the dangers of such a paradigm is that one is not sure about the variable under consideration being responsible for the transformations and there is always the problem of extraneous factors. For examples of this kind of 'before-and-after' studies, see Box 3.2.

#### Box 3.2 Examples Of 'Before-And-After' Studies as given in Srivastava (2004: 10-11)

The so-called 'before-and-after' studies are regarded as an alternative to the classical experimental design. In them, a phenomenon is studied before and after the introduction of the independent variable. A comparison of the two states will tell us about the change. F. Stuart Chapin's study (1963) of public housing in Minneapolis coined the term 'ex-post facto research' for such studies. ... ..In the Indian context, many researchers working on communities that have been displaced because of development projects (such as the construction of a dam, mining, industry) have adopted this approach (see The Eastern Anthropologist 53 (1-2) 2000).

### ii) Static group comparison paradigm

In the static group comparison paradigm, instead of studying the same field situation before and after, one compares two similar field situations, one with and the other without the introduction of the independent variable. For example one may have two identical neighboring villages, but one gets access to television and the other does not. So one may study the effects of television viewing by comparing the villages. Does this example remind you of Scarlett Epstein's work cited earlier?

### iii) Nonequivalent control group paradigm

In the nonequivalent control group paradigm, one compares one field situation before and after the introduction of an independent variable but also compares it with a field in which the variable has not been introduced but which is similar in all other respects. This would be the case say for example when one had two identical villages that were both studied and then one of them received a significant input, like a school. Then both schools were again studied to see what effect the school had, but now we can compare it by measuring against the village that did not receive the school.

The most common source of error here would be that some sort of selection process has already taken place for the introduction of the external variable. For example a particular population size or caste composition may be responsible for the fact that one village received a school and the other did not. To remove the possibility of such an error a fourth paradigm may be taken recourse to and this is called the Nonequivalent Control Group Paradigm.

Here everything is like the third paradigm situation except that the field situations are chosen at random and not selectively. However this also depends on the possibility of having such random selection that is if there are enough field situations of the similar type and whether the researcher has access to selection of any such field situation. One can have such a paradigm when the number of situations is many and equally available, say if one were to study the effects of introduction of computers in secondary schools in Delhi. The most obvious disadvantage of random sampling<sup>®</sup> is that one may not get the desired result. In fact such methods are more useful for quantitative research, like the school example cited.

## 3.10 Sensitivity to Alternative Explanations

One fact that must be kept in mind while doing research and using the various paradigms discussed is that as social scientists one must be sensitive to the existence of alternative explanations even if one has proven the hypothesis. Rigidity is not a virtue because social science research of real life situations is complex and multifaceted.

### 3.11 Rival Hypothesis Construction

The process of rival hypothesis construction is a standard procedure to test the efficacy of research. The four factors that form the basis of the four major rival hypotheses are

- i) The effects of selection
- ii) Reactive measurement effects
- iii) The effects of uncontrolled extraneous variables
- iv) Interaction effects involving selection.

Let us discuss each of the four factors.

#### **i) The effects of selection**

A selection effect occurs whenever the treatment group or the group we are studying for the introduction of the variable is different from the comparison group because of the way in which they were selected or rejected for introduction of the particular variable, like for example school. The advantages that may be perceived as emanating from the school may be because the number of persons of a dominant caste/class is more in the particular village and the school may have been introduced because of the greater clout of the dominant caste members. So it is class advantage that may have already been there and not merely the introduction of the school that may be perceived in the study as better hygiene consciousness or better use of medical facilities, etc.

#### **ii) Reactive measurement effects**

The second rival hypothesis situation may occur when the measurement process itself may introduce transformations in the field. Like for example as it often happens when students from Delhi go to carry out field-based social research in villages, the perception of the villagers of the urban elite/ middle class to which the students may belong often affects the responses and sometimes even the behavior pattern. The villagers might for example wear more urban clothes while the researchers are around or profess greater faith in modern medicine.

#### **iii) The effects of uncontrolled extraneous variables**

The third type of error is due to the introduction of uncontrolled extraneous variables, that is, those variables that were overlooked or that entered while the research was in progress.

#### **iv) Interaction effects involving selection**

The fourth type of error occurs when the selection process and extraneous variables both occur in conjunction.

Our discussion of hypothesis testing is a process that takes the researcher a step forward in the investigation. It is an example of the organised skepticism of science. In other words, you may say that this reflects the rejection of any statement without empirical verification. A number of works have been based on the processes of hypothesis testing and several

middle range theories have emerged as a result of such inductive analysis; one good example is the work of Robert. K Merton (1950) on the *American Soldier*, in which he had developed the theory of latent and manifest functions.

The efforts to produce a rigorous theoretical analysis in the social sciences is however always met with skepticism as the results rarely are able to attain the status of laws but middle range theories like that of Merton, cited above, can be quite effective in explaining if not predicting social behavior.

### 3.12 The Use and Scope of Social Science Theory

A very significant aspect of social science research is that this research itself is often instrumental in changing human behavior. If human beings are made aware of destructive or potentially disruptive behavior then they can and do make conscious efforts to change it (Refer to the rationale and purpose of MSO 002 as discussed in the Course Introduction). In this way, the subjects and objects of study in the social sciences have a dynamic interactive relationship. For example, if certain kinds of child rearing practices are shown to be harmful for the normal development of the child, then they may be arguably modified or abandoned. Any predictions made by the study on the ill effects of a particular practice may be reversed during the course of research itself.

Moreover a lot of research in sociology and anthropology has been directed towards revealing what has been variously called latent functions or unintended consequences of human actions. However, once made public these do not remain latent or unintended and may in fact replace the earlier ways of thinking by the actors themselves. For example, in urban India marriage is by and large not considered a religious or sacred ceremony to the extent that it was believed to be a generation back. More people would point to it as an occasion to bring the family together or to cement social relationships or to increase social solidarity, a function of marriage that in the earlier times was perhaps more visible to the social analysts than to the actors themselves.

Many scholars now consider it possible that subjective dimension of human behavior, like moods, dispositions, emotions and values are open to sensory perception and therefore form part of externally observable data. The conclusions that we reach regarding such subjects are based either on the information given to us by the actors or by a process of empathetic understanding where the scholar tries to get into the place of the actor. Rosaldo (1984), in his article "The Rage of the Head Hunter" puts himself in the place of the headhunter to analyse the anguish that is felt at the death of a loved one, at the loss of his wife Michelle Rosaldo. Thus the social scientist interprets the actions in terms of the subjective experiences as a human being and being subject to the same emotions

and motivations as any other.

On the other hand it is also realised that one need not step mentally into the shoes of the actors to understand a phenomenon. For example one need not be suicidal at any point of time to do a sociological analysis of suicide. But there is certainly a qualitative difference between the kind of analysis that looks at the phenomenon from the outside and the more reflexive kind of descriptive work.

Not all types of human behavior are subjective and there are many concrete and visible outcomes of behaviour that can be measured and studied. An alternate manner of constructing theory came from the 'behaviourists', who rejected the vagueness implied in 'subjective' understanding. An extreme behaviorist position may deny all subjective and internal mental conditions but most prefer a modified version. Here the introspective data from subjects is treated as data and then subjected to analysis. This is similar to the approach where contradictory inputs by various actors in the field are analysed as data that represent the conditions of the field, like different power positions occupied by the actors or conflicting identities.

At this point in our discussion, we need to also look at the question, how do values held by researchers affect theory building?

### **3.13 Theory Building and Researcher's Values**

The last point on which we will concentrate in this unit would be the extent to which the values held by a social scientist enter into the process of theory formation or in other words what is known as the value oriented bias of social science inquiry. The four points at which values can enter is at the level of

- i) Selection of problems
- ii) The determination of the contents of conclusions
- iii) The identification of facts
- iv) The assessment of evidence.

We shall now discuss each of the entry points for values of researchers to creep into the social research.

#### **i) Selection of problems**

A social scientist is guided by several considerations in the choice of subject matter of which her/his value orientation is one, that is a feminist would be interested to research women's problems, or a Marxist to work on subjects like agrarian relations or the exploitation of labor in factories. Moreover the manner in which a concept is constructed such as say the concept of culture or what goes into determining the status of women, is also conditioned by the subjective orientation of the researcher.

#### **ii) The determination of the contents of conclusions**

The determination of contents of conclusion is something on which the



criticism of almost all theories is based. It is felt that most social scientists have a fairly well formed idea of what is the nature of the reality that they are trying to prove and most research is aimed at proving or disproving what is already intuitively known to the scholar. Moreover larger interests about the society at large or moral and ethical viewpoints often creep into whatever a theory is trying to prove or disprove. During the colonial regimes most anthropologists took equilibrium as the natural state of societies and their theories were directed towards demonstrating how such equilibrium states are maintained. Any disruption of the equilibrium was seen as abnormal or pathological (or a condition of anomie). The value orientation of the sociologists and anthropologists colluded with that of the administrators and often both were one and the same person. Or otherwise the anthropologist was on the pay-roll of the administrator. The goal of the administrators was to establish equilibrium in their colonies therefore equilibrium was also the desired state and viewed as such by the scholars too.

### **iii) The identification of facts**

It is not impossible to distinguish between facts and values and contributions to theoretical understanding may be achieved even if the values of the social scientist are at variance. For example the contribution made by avowed ideologically oriented social scientists such as Marxists is still considered of considerable theoretical significance especially if they had been able to contain their value orientations within the limits of reason.

Another remedy often resorted to in contemporary theory is to make the value orientation of any work quite clear so that the reader is not misled and is able to contextualise the theory to its orientation. This could also take care, for example, of the difficulties faced in the social sciences because of the evaluative character of the terms and concepts used. It is not always very clear as to what exactly is the distinction between facts and values. For example in the nineteen seventies a certain kind of ecological approach concentrated quite a bit on the study of resource utilisation as a way of looking at a community's relationship with its habitat, often looking towards the goal of maximising such utilisation. But another school of environmentalists would vehemently be opposed to the term "resource" being used for the habitat as this term in itself is reflective of an exploitative attitude towards the environment. Such persons may not think of the environment as a resource for use by human communities but as something that has a right to existence by itself. The second point of view may look upon maximisation of resource utilisation as a negative rather than a positive goal. Moreover while writing ethnography one may be tempted to use words like kind or cruel, both of which cannot be understood without reference to a value framework. Contemporary ethnographies normally tend to consciously avoid using such terms preferring instead to give a detailed description of the actions leaving it to the readers to form their own judgments or

using such terms by which the actors themselves designate the acts.

#### iv) The assessment of evidence

There is always the apprehension that only conclusions but even the process of evaluation of data is often value loaded. Some kind of data may be totally overlooked or ignored by a social scientist simply because of innate value orientations. For example, the feminist scholars had alleged that male scholars ignored women's activities and role in society simply because of their patriarchal bias. Does this discussion remind you of the example of Weiner's (1976 and 1977) study of Trobriand Islanders, mentioned earlier in Unit 2? Similarly Dalit scholars have often made allegations that upper caste scholars have often presented a biased Brahmanical view of society in India, selectively using data to do so.

Even in statistical analyses, value commitments are not ruled out. But value commitments are also of two kinds, covert and overt. For example Malinowski's oversight may have been unintentional but sometimes researchers allegedly manipulate data towards a particular end.

One kind of bias that is almost inevitable is the one connected with the historical and situational impact upon a student of society of the place and time to which she/he belongs. As we shall discuss in greater detail in the next unit, the evolution of scientific thought is also a product of the history of human society. World events and transformations of intellectual climate are determining factors that can rarely be avoided in the manner in which theory is formed.

### 3.14 Conclusion

Human history and human knowledge are inextricably interlinked. This is how we come to have a sociology of knowledge and that is why the history of a discipline is always an integral part of its curriculum.

However if we accept the subjective nature of sociological knowledge, is it that only the followers of the school of thought that produced it can understand a theory? The problem has been partially solved by the concept of relational objectivity or relationalism. In this the social scientist makes clear at the outset, the perspective that is being followed in the analysis so that readers can subsequently put in the context the findings and draw their own conclusions. The point is to make clear the basic assumptions on which the theory is formulated and it is for other scholars to accept or reject the theory on the basis of whether the basic premises are acceptable or not. For example the entire debate on whether matriarchy or patriarchy was the initial stage of human society is meaningful only when one accepts the basic premise of the stage-by-stage evolution of human societies. If one does not accept the basic premise itself, then the entire debate becomes meaningless.

If we do not accept the above path, the only generalisations that can

have universal validity in the social sciences are the statistical generalisations, like say for example the fact that female infanticide rates have increased from 1950 to 2004. But such generalisations are not theory. They only form the basis for theory and when a theory is formulated out of statistical generalisations there is still plenty of scope for varied interpretations.

In Unit 4, we shall look into a broad overview of the way in which theoretical analysis has proceeded in sociology and how the major premises have transformed themselves historically.

### Further Reading

Kaplan, Abraham 1964. *The Conduct of Inquiry*. Chandler: London (For a detailed study of the logic of inquiry into social phenomena)

