The Idea Of

A Religious Social Science

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Preface

In this book, the words 'science' and 'social science' are used in their limited sense that refer to experience-based knowledge. This should not indicate that experience is being used in a positivistic sense. Rather, the important insights of all kinds of post-positivist views are embraced to give an extensive meaning to experience. However, the most important characteristic of experience and science that should never be excluded is its dependence on observation and observational evidence.

Thus, when 'science' is used in combination with 'religion', it should not be confused by religious knowledge. The latter might refer to, perhaps, a certain kind of knowledge that could be found in religious texts and might be different from other kinds of knowledge. However, when the phrase of 'religious science' is used, it refers to a scientific knowledge, even though because of its religious presuppositions it is called religious. And this relation between religion and science is exactly the point that is at issue in this book.

On one hand, the issue of religious science raises challenges on the ground that the contemporary science has been explicitly non-religious or perhaps in some cases anti-religious. Objectivity of science is usually understood in a way that it does not permit to combine 'science' with 'religion'. Thus, in the first step, the phrase of religious science is considered as nonsense.

On the other hand, as far as religious people are concerned, the issue of religious science is enthusiastic. These people sometimes think that a real religion should include all scientific truths. Thus, facing the issue, they immediately verdict that there are or should be religious sciences.

However, neither that strong challenge with the possibility of any religious science, nor this hot enthusiasm could be in congruence with the spirit of scientific endeavour. As far as social scientists are concerned, the possibility of religious science should not be rejected a priori. This possibility should not be necessarily considered as a threat for science, rather the plausibility of its being a chance for the development of science should also be taken into account. On the other hand, as far as the religious people are concerned, they should not necessarily consider the possibility of talking about religious sciences as a chance for spreading their religion, rather the plausibility of its being a threat for their purpose should also be considered. This is because entering of a religion into a job which is not relevant to it could be dangerous.

Far from these two kinds of biases, it is attempted in this book to deal with the issue in a reflective manner. It seems that thinking about 'religious science' requires us to take three steps. In the first step, we need to think about the nature or characteistics of science. In the second step, we need to think about the nature or characteristics of religion. And finally, in the third step, it seem necessarty to think about the combination of them. These three steps show the direction of the discussion in what follows.

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Chapter 1

Science:

Positivist and Post-positivist views

Introduction

In spite of that the nature of science is sometimes considered as self-evident, the long-standing controversies of philosophers of science during the last century has made this point clear that it is only an oversimplification to regard science as self-evident. This is true even in the case of the scientists themselves. In other words, even though the scientists are engaged in providing scientific findings, this does not indicated that the nature of science is known to them. This is exactly the same as to say that people who are deeply engaged in their psychological experiences are quite familiar with the processes involved in the experiences. While these people are engaged in their psychological experiences, they are by no means psychologists and have no complete knowledge of their experiences. Thus, knowing science as is going in philosophy of science could, in some extent, be informative for the scientistis.

Philosophy of science was predominantly positivistic during the first half of the twentieth century. Within the second half, however, the Received View confronted different challenges which are sometimes referred to as post-positivist views. This debate has been quite extensive and complicated. We will explain the main lines of thought briefly as a requirement of the discussion on religious social science which is the main purpose of this book. In what follows, the positivist account of science will be touched upon and then the post-positivist views will be referred to in some length.

1.1. The Positivist Account of Science

The final version of the Received View formulated by Carnap an Hempel construes scientific theories as having a canonical formulation satisfying the following conditions (Suppe, 1977, pp. 50-51):

1) *There is a first-order language L (possibly augmented by modal operations) in terms of which the theory is formulated, and a logical calculus K defined in terms of L.*
2) *The nonlogical or descriptive primitive constants (that is, the 'terms') of L are bifurcated into two disjoint classes: one which contains just the observation terms, and the other which contains the nonobservation terms. The first class must contain at least one individual constant.*
3) *The language L is divided into the following sublanguages, and the calculus k is divided into the following subcalculi:*
    a) *The observation sublanguage. This is a sublanguage of L which contains no quantifiers or modalities, and contains the observation terms but non from the class of nonobservation terms. The associated subcalculus here deals only with observation terms. Any nonoberservation or nonprimitive terms must be defined in terms of this subcaluculus.*
    b) *The logically extended observation sublanguage. This sublanguage is formed from the observation sublanguage by adding the quantifiers, modalities, and so on, of L. Its associated subcalculus is restricted to the requirements of this sublanguage.*
    c) *The theoretical language. This sublanguage of L does not contain observation terms. Its associated calculus is restricted to the properties of this sublanguage.*

These sublanguages together do not exhaust L, for L also contains mixed sentenses—that is, those in which at least one theoretical and one obsevation term occur.

4) *The observation sublanguage and its associated calculi are given a semantic interpretation which meets the following conditions:*
   a) *The domain of interpretation consists of concrete observable events, things, or thing-moments; the relations and properties of the interpretation must be directly observable.*
   b) *Every value of any variable in observation sublanguage must be designated by an expression in this sublanguage.*

   It follows that any such interpretation of the observation sublanguage and its associated calculus, when augmented by appropriate additional rules of truth, will become an interpretation of the logically extended observation sublanguage and its associated calculus. Interpretations of the observation sublanguage and its associated calculus may be construed as being partial semantic interpretations of L and K, and it is required that L and K be given no observational semantic interpretations.
5) *A partial interpretation of the theoretical terms and of the sentences of L containing them is provided by the following two kinds of postulates: the theoretical postulates (that is, the axioms of the theory) in which only theoretical terms occur, and the corresponding rules or postulates which are mixed sentences. The corresponding rules must satisfy the following conditions:*
   a) *The set of corresponding rules must be finite.*
   b) *The set of corresponding rules must be logically compatible with the theoretical postulates.*

c) *The corresponding rules contain no extralogical term that does not belong to the observation or theoretical terms.*
d) *Each rule must contain at least one observation term and at least one theoretical term.*

Let T be the conjunction of the theoretical postulates and C be the conjunction of the correspondence rules. Then the scientific theory based on L, T and C consist of the conjunction of T and C and is designated by 'TC'.

The most important characteristics of the positivist account implicitly or explicitly stated above are a number of distinctions between science/metaphysics, theory/observation, fact/value, and discovery/judgement. All of these characteristics assumed for science are challenged by post-positivist views. In what follows, the most important of these challenges will be explained.

1.2. Post-positivist Challenges

In this section, post-positivist challenges to the positivist account will be referred to by concentration on the distinctions assumed in this account. Thus, these rubrics will be followed: integration of science and metaphysics, integration of theory and observation, integration of fact and value, and integration of discovery and judgement.

1.2.1. Integration of Science and Metaphysics

The post-positivist critique on the supposed distinction between science and metaphysics led steadily to a kind of relationship between them which at most suggests a conception about their integration.

While Popper (1952) was talking about demarcation criterion between science and metaphysics, he admitted that metaphysics can be considered as an influential source on the process of scientific discovery. Popper's talk about 'the influential metaphysics' led some members of the Vienna Circle to regard him as a champion of dangerous metaphysics. Nevertheless, he persisted on his view so that he talked explicitly about 'metaphysical research programmes' such as atomism; programmes that are not testable but their influence upon science exceeds that of many testable theories.

In addition, Popper's view on the social sciences goes even beyond this. Contrary to positivists, he holds that the criterion of natural sciences could not be used properly in social sciences on the ground that precise refutability is not possible in them. In 'The Open Society and its Enemies', Popper (1950) regards an important room for metaphysics in economics and psychology. According to him, 'rationality principle' that has a metaphysical tone takes a focal point in these social sciences. This principle indicates that the human behavior is dependent on the perception of relevant situations.

Other than Popper, people like Burtt (1949), Koyre (1968), Agassi (1959) and Watkins (1958), among others, emphasized in different ways on the place of metaphysics in science. Agassi talked about 'programme' as a background knowledge that indicates some principles which are accepted a priori and have considerable influence on hypothesis formation. In the same way, Watkins referred to the influence of metaphysical views, like determinism and mechanism, on the process of scientific work as 'regulative role'.

Kuhn (1970) presented his well-known account on the history of science in terms of 'paradigm'. Masterman (1970) says that most of philosophers of science regarded paradigms as metaphysical

paradigms. However, she believes that 'paradigm' has been used by Kuhn in different meanings. She suggests three main meaning for paradigm in Kuhn's usage: metaphysical, sociological and constructive. According to her, while the last usage is essential in Kuhn's work, he has also used paradigm in metaphysical sense. In this sense, paradigm provides a particular way for looking at things. In other words, paradigm provides a particular world-view.

Lakatos (1970) regarded an important room for metaphysics even in natural sciences. He talks about science in terms of 'research programs'. In a research program, there is a 'hard core' which has 'negative heuristics' as well as 'positive heuristics' for the scientist. The hard core is the place where basic presuppositions and ideas of a research program should be sought.

There are some differences between Lakatos and Popper here. In Lakatos's view, the boundaries of metaphysics and science blurs because of the central place of the hard core in research programs. In addition, Popper refers to metaphysics merely by existential statements which have certain syntactical features in which 'all-some' statements are used. Thus, the irrefutability of metaphysical statements is in fact syntactical; that is, basic statements could not conflict with them because of their logical form . Lakatos, on the other hand, regards the hard core irrefutable but not on logical and syntactical grounds, rather as a methodological affair and that is why he talks about 'methodological irrefutability' (p. 183). He means by this that the scientist methodologically regards the hard core irrefutable and accordingly tries not to consider counter-evidence threatening to the hard core as far as possible.

A more explicit case of integration between metaphysics and science could be seen in Wisdom's work (1987). Criticizing Popper on

putting metaphysics out of the realm of science, Wisdom states that some kinds of ontology should be considered as the components of scientific theories (p. 129). According to him, three components could be considered for a scientific theory:

1. Empirical content. This component is refutable by observation.

2. Embedded ontology. This component provides a more or less explicit conception about the subject being studied. Absolute space in Newton's theory is an example of this kind of ontology. The importance of this component is that without considering it understanding or working on the empirical content is not possible.

3. Unembedded ontology. In this component is also involved a kind of conception about the subject being studied. The difference is that this kind of ontology is not stated explicitly within the theory. Nevertheless, its shadow is considerably on the theory everywhere. The influence of this component could be seen in its prescriptions and proscriptions concerning the strategy and method used in the theory. By prescriptions, it gives particular ways to the theory to go ahead and by proscriptions it closes some ways for the theory. Wisdom refers to this kind of ontology by the term 'Weltanshauung'. An example of this ontology in physiological and biological theories is the unstated principle that all bodily changes are due to physical causes. While this principle is unstated, its influence could be seen on all developments of the theories concerned (p. 140).

While Wisdom talks about the penetrating influence of ontology within scientific theories, he excludes ancient metaphysical systems from providing such impacts. This is because, according to him, these systems deal with abstract affairs such as substance, the nature of universals and the like. However, this argument is not acceptable because his own criterion about 'Weltanshauung', namely impact on the strategy and method of scientific theories, might hold in the case of the ancient

metaphysical systems. For instance, Aristotle as well as Liebnitz considered necessary relationships among substances which is known as the principle of determinism and it is clear that this principle has being quite influential on scientific theories. And, in fact, is not Wisdom's above-mentioned example of unembedded ontology in physiological theories itself a case of determinism?

On the whole, considering post-positivist views on science shows that an increasing integration between metaphysics and science has been regarded since the beginning of the twentieth century.

1.2.2. Extent of Metaphysics' Impact on Science

Given that metaphysics and science are integrated, a further interesting question arises as to how far the impact of metaphysical component of a scientific theory on its empirical component goes.

In a general statement, as hinted above, the impact of metaphysics on science has negative as well as positive aspects. Referring to these negative and positive heuristics, Lakatos (1970) gives an illustrative example: "Cartesain metaphysics, that is, the mechanistic theory of the universe—according to which the universe is a huge chockwork (and system of vortices) with push as the only cause of motion—functioned as a powerful heuristic principle. It discouraged work on scientific theories—like [the 'essentialist' version of] Newton's theory of action at a distance—which were inconsistent with it (negative heuristic). On the other hand, it encouraged work on auxiliary hypotheses which might have saved it from apparent counterevidence—like Keplerian ellipses (positive heuristic)."(pp. 132-133)(Italics in the original)

To give a more detailed account of the impact of metaphysics on science, it could be explained in different phases of scientific work,

namely in problem selection, concepts and models, explanation style, hypothesis developing, research methods, observation and prediction. In what follows, these points will be explained respectively.

Problem Selection. *Research problems have to a considerable extent a selective nature. In other words, research problems are neither neutral nor directly accessible. Certain ontological assumptions are required for referring to a problem and formulating it.*

Let's suppose that a psychologist seeing that a child does not learn something, tries to pose the problem as follows: "What has happened to him that disturbing his learning?" This question could arise only after having certain ontological assumptions. One such assumption is that there is deterministic relationships among events. Accordingly, any event is due to the effects of a precedent event. One must not think that this assumption is self-evident or generally accepted. Al-Ghazzali, in the East, and Hume, in the West, among others, thought that there is no deterministic relationship among events. The former interpreted so-called 'necessary relationship' as the constant Divine Will which could be otherwise and the latter considered it to be a mere psychological expectancy rather than referring to reality. In addition, the actual role of indeterminism in quantum physics is sufficient to show that determinism is not a self-evident principle.

Another assumption presupposed by our psychologist is that determinism holds in the case of human behavior. This assumption is not self-evident either. That is why some philosophers have considered human behavior as an exception to the principle of determinism and others differentiated between 'hard determinism' and 'soft determinism' to put human behavior under the latter in order for providing a room for human choice.

Thus, to consider a problem requires having certain metaphysical assumptions. Stated conversely, metaphysical assumptions have an impact on posing or selecting a research problem.

Concepts and Models. *When the problem is selected, the researcher needs to think about it and make it clear. For doing this, the researcher appeals to some concepts and probably uses some models.*

Here, too, the researcher, in fact, selects among the huge number of concepts available within the language and this requires using a criterion or, at least, having some preferences. The role of presuppositions or metaphysics of the researcher is vital here too.

Returning to the example of psychologist, given that she has assumed determinism, concepts like 'force', 'effect', 'stimulation', 'push', 'prevention', and probably 'motive' in its mechanical sense would be preferable to her. On the other hand, given that she has considered indeterminism as her metaphysical assumption, she would prefer concepts like 'chance', 'probability', and 'decision'. Having a more explicitly teleological assumption, she would use concepts like 'inclination', 'pull', 'function', and 'attraction'. Our psychologist would use such concepts to formulate the problem of learning

The three metaphysical assumptions, namely determinism, indeterminism, and teleology, could of course be used in combination. As an instance, Popper's combination of indeterminism and teleology is worth mentioning. Criticizing determinism, Popper (1990) defends from indeterminism: "Our inclination to think deterministically derives from our acts as movers, as pushers of bodies: from our Cartesianism."(p. 24) Instead, he talks about the combination of attraction of future which is teleological and possibilities which indicates indeterminism : "It is not the kicks from the back, from the past, that impel us but the attraction, the

lure of the future and its competing possibilities, that attracts us, that entice us." (pp. 20-21).

Parallel to the preference of the concepts, the researcher chooses or invents models for making the problem clear. Like concepts, models are also suggested in congruence with metaphysical assumptions. Our psychologist, having a deterministic assumption, would use a model like that of behaviorists, namely 'stimulus-response' (S-R), or a Cybernetic model. Some have regarded Cybernetic models as teleological. However, as Bertalanffy (1970, p. 40) holds, these models are basically mechanistic because the basic scheme of Cybernetics essentially implies one-way, though circular, causality and the existence of a controlling center. The feedback scheme is not applicable in the case of multivariable causality, and where there is interaction between many components and processes. Furthermore, he mentions that the German term 'Regelmechanismen' refers to the essentially mechanistic character of the model.

On the other hand, indeterminism is in congruence with models like 'tossing'. It is worth mentioning that Einstein who advocated determinism said in undermining indeterminism that God is not tossing in the world. Finally, assuming teleology would show congruency with models like 'growth' borrowed from the world of plants. This kind of model was used paradigmatically by Aristotle due to his teleological assumption.

Thus, concept formation and modeling in the process of scientific activities are under the influence of metaphysical backgrounds.

Explanation Style. *In trying to provide an answer to the problem concerned, the researcher uses a particular type of explanation. Here, explanation is meant to refer to the general sense of this word, rather than being used in contrast to 'understanding' as it is known in the*

phenomenological and hermeneutic traditions, though this contrast will be relevant to this discussion when explanation is used in its particular meaning. In the general sense of explanation, the style of making something intelligible is concerned. Different styles appear in congruence with the background metaphysics.

Returning to the example of psychologist, when she has deterministic assumptions, she would use causal explanation to make the child's learning problem intelligible. In this causal explanation, efficient causes are basically relevant. However, when she holds indeterministic assumptions, probabilistic explanation and using fuzzy logic will be preferred. Finally, when she has a teleological background for thinking, explanation is advanced in terms of 'final causes' or 'reasons' the child would give for his behavior. It might be suggested, for instance, that the child, by avoiding learning, is engaged in a cold war with the parents or the teachers.

Hypothesis Development. *A further step in the researcher's scientific activity is to develop guesses or hypotheses about the problem. The impact of metaphysical assumptions appears in this step by showing that some of the possible hypotheses, rather than others, are more plausible. 'Plausibility' has a trace of the background assumptions on it.*

Let's return to the example of the psychologist once again. Initially, there could be limitless hypotheses for the learning disturbance of the child. These are some possible hypotheses: 1) The learning disturbance is due to the impact of a celestial body's magnetic wave on the child's brain. 2) It is due to the intervention of the fairies. 3) It is not due to a certain cause; it sometimes just happens. 4) It is because the child does not want to learn. 5) It is due to the association of a bad

experience with the teacher. 6) It is due to the intention of the child to take low grades to use them as a threat against the parents.

This list could be lengthened. However, our psychologist, in encountering with an even longer list than this, would see some of them more plausible than others by relying on her assumptions. For instance, given a deterministic assumption, the hypotheses 3 and 4 would be put aside sooner than the others on the ground that an indeterministic presupposition lies behind them. Then, the hypothesis 6 will be put aside because its background is a teleological assumption. After that, the hypotheses 2 and 1 would be put aside. Even though these are deterministic in tone, the former is not suited to a mechanical view because it has appealed to supernatural entities and the latter is not verifiable in practice. Finally, the hypothesis 5 would be the one more congruent with the deterministic assumption.

Research Methods. *Methods for verifying the plausible hypotheses are under the direct impact of the researcher's explanation style and, by means of it, under the indirect impact of metaphysical assumptions. Given that our psychologist has adopted (efficient) causal explanation, she would embrace quantitative, rather than qualitative, methods.*

Another line of influence on research methods comes from metaphysical assumptions about the nature of subject being studied. To be a materialist who does not believe in supernatural entities whatever or a religious person who believes in the human spirit or a humanist who believes in will and choice in the human, our psychologist's research methods would not be the same. When the spirit or will has not complete behavioral manifestations, then knowing it requires not to limit oneself to observational methods. That is why some methods such as introspection or empathy with others, that is, to imagine to be in the world of others,

are suggested in the realm of humanities or human sciences. Thus, there is a congruency between metaphysical assumptions and research methods.

Observation and Prediction. *When the researcher comes to the realm of observation to examine the hypotheses established or predict according to them, the most direct relationship with the world appears.*

However, as post-positivist philosophers of science have shown, one must not think that observation occurs directly and no impact of metaphysical assumptions is involved in it. This point will be explained later by referring to the integration of theory and observation. It is sufficed now to mention that the impact of metaphysical assumptions is considerable even at observation and prediction.

The impact of metaphysical assumptions on observation appears in both determining the district of observation and interpreting the things being observed. The first point indicates that metaphysical assumptions prevent us from seeing some things or noticing them as they make some others more salient. The second point, namely interpretation, refers to how to understand what is being observed. This understanding is to some extent one component of our observations. It is not always possible to separate what is being observed and how it is understood. Having considered this involvement, the impact of metaphysical assumptions on observation would be clear.

Returning to our example of psychologist, given that she has deterministic assumptions and thereby looking for past events that might have caused the learning disturbance, she, at best, does not notice to the reasons the child might give about his problem. At worst, she might consider these reasons as mere 'rationalizations' that distorting her from finding the real causes. At this point, her interpretations have appeared.

A deterministic assumption shows its impact on observation by providing an interpretation about what is being observed.

Another line of interpretation appears when the researcher encounters failure in prediction. These failures do not indicate for the researcher that the basic assumptions were wrong, rather, by relying on them and keeping them tact, the guilty of failure is directed to giving adequate operational definitions of the concepts, procedural affairs in doing observation or prediction and the like. This kind of understanding the affairs is due to the reliability of metaphysical assumptions. In fact, these assumptions would be the last suspect.

On the whole, it could be concluded that the impacts of metaphysical assumptions are clear in every step of the process of scientific work including problem selection, concepts and models, explanation style, hypothesis developing, research methods, observation and prediction.

1.2.3. Integration of Theory and Observation

In spite of positivists believe to the effect that observation is distinct form theory and prior to it, post-positivists hold that talking about facts is always theory-laden. In other words, pure and theory-free observation is not possible.

The term 'theory-ladenness of facts' is used first by N. R. Hanson (1958), but others including Popper, Kuhn, Lakatos, and Laudan have also appealed to it. Kuhn (1970) holds that, given certain assumptions, the world is seen in a particular way and by replacing them by other assumptions, the same things are seen differently. According to his own terminology, paradigm-shift leads to a gestalt switch which in turn leads to difference in observation. Hence, he talks about scientific revolutions

as changes of wold view. Referring to the ambiguous picture of duck and rabbit, he says: "What were ducks in the scientist's world before revolution are rabbits afterwards."(p. 111)

In the case of involvement of theory in observation, Lakatos (1970) points out that in researcher's techniques, some theories are implicitly presupposed. In other words, observations advanced by these techniques are dependent on those theories; theories that might not be true. He refers to Galileo's claim that he could 'observe' mountains on the moon and spots on the sun; a claim that led to the rejection of Aristotle's theory according to which celestial bodies were faultless crystal balls. Lakatos states that one should not think that these 'observations' were pure and direct: "But his 'observations' were not 'observations' in the sense of being observed by the—unaided—senses: their reliability dependent on the reliability of his telescope—and of the optical theory of the telescope—which was violently questioned by his contemporaries."(p.98)

Lakatos even goes further and says that our ordinary observations are also theoretical: "On the other hand, calling the reports of our human eye 'observational' only indicates that we 'rely' on some vague physiological theory of human vision."(p. 107)

This indicates that there is a one-way determination of observation by theory. This shows that some post-positivists, in opposing positivists, have gone to the extreme point so that it might not remain anything but theory-driven observation. This could lead us to a radical relativism on the ground that there could not be something like a more or less general observation language in terms of which different theories could open a door for dialogue.

Kuhn has taken a more desirable position in this regard. While he accepts the impact of paradigm-shift on observation, as stated above, he

admits translatability between different paradigms. This enables him to avoid radical relativism. Hence, in a Postscript to his book, he criticizes Quine on his thesis of indeterminacy of translation and says: "But Quine seems to assume that two men receiving the same stimulus must have the same sensation and therefore has little to say about the extent to which a translator must be able to describe the world to which the language being translated applies."(p. 202) In other words, one can translate the other's theory and its consequences into his own language and at the same time to describe in his language the world to which that theory applies.

On the other hand, there has also been an idea of ideterminacy of theory by observation. This has been referred to by 'Duhemian problem' or 'Duhem-Quine Thesis'. According to this holistic view on scientific theories, observation does not determine that a theory is falsified. This is because, the argument goes, prediction is based on both theory and all its auxiliary hypotheses. Thus, when predictions fail, it is not clear whether the theory itself is false or anyone of its auxiliary hypotheses. Logically speaking, given that the subsequent of our hypothetical syllogism is rejected by observation, it is not clear that which component of the antecedent (composed of the main theory and auxiliary hypotheses) is false.

Referring to this indeterminacy, Quine says: "Any statement can be held true come what may, if we make drastic enough adjustment elsewhere in the system."(Quine, 1953, ch. 2)

Lakatos (1970) distinguishes two versions of the indeterminacy thesis. He calls them strong and weak interpretations of the thesis, while attributes the former to Quine and the latter to Duhem. According to the former, there is no rational rule for selecting among the rival theories because falsification is not possible at all, while the latter indicates that

only dogmatic and naïve falsification is not acceptable. Lakatos advocates the latter and rejects the former (p. 184). To avoid the criticism of indeterminacy thesis, he holds that a research program, rather than atomic sentences, might be confronted with refutation in the long run. Degenerative research programs that fail in successive predictions are refuted.

It is worth mentioning that Quine (1960) changed his holistic position from its extreme form to a moderate holism. According to the latter, the whole science is no longer supposed to confront with experiments, rather it is held that some sentences are closer to the experimental world and its refutations, even though it is still held that the whole theory is a seamless web. Thus, it seems that Quine's 'under-determination' of theory by observation in its last version could be closer to the position advocated by Lakatos.

To conclude, it should be said that in the case of relationship between theory and observation, a more or less common observational ground is needed for different theories to be able to communicate each other. As Stephen Gold says, apples are still fall down from trees, while gravitation theory has undertaken deep changes from Newtonian paradigm to that of Einstein (Eger, 1989). This is not to return to the idea of theory-free observation but rather to consider an interaction between theory and observation. Looked from this angle, it could be said that observation is under-determined by theory, while theory itself is also under-determined by observation.

1.2.4. Integration of Fact and Value

Another kind of integration claimed by post-positivists is integration between fact and value. This has been the result of a new

view to science in which science is considered as a cultural affair and like other cultural affairs is value-laden.

An important role in claiming the integration between fact and value is undoubtedly played by Kuhn. As stated before, other than the metaphysical sense, paradigm has a sociological as well as a constructive sense in Kuhn's usage. The sociological sense of paradigm indicates that values are deeply involved in scientific endeavor because it requires adopting certain norms and habits to be able to attend in scientific activities. Also, in the constructive sense, it is assumed that scientific activity deals with solving puzzles. In fact, a paradigm determines what are to be considered as puzzles and how to resolve them. As Masterman (1970) says: "The normal scientist is a puzzle-solving addict; it is in this puzzle-solving—not just vague 'problem-solving', but puzzle-solving—that normal science prototypically consist. And a puzzle is always an artefact."(p. 70) In this way, science is value-laden and value-driven.

In addition, when scientific revolutions occur, we must select among the rival theories or paradigms and this involves value judgement. Stegmuller (1979) states that, according to Kuhn, these judgements are advanced, in the first stance, on the grounds of expediency and pragmatic considerations. Theoretical considerations are, in the final analysis, dependent on expediencies. Things like budget, providing power and hegemony for a country are the important factors that determine the content and direction of scientific activity.

Laudan (1984) has also considered an important room for values in the structure of science. Using the term 'research traditions', he considers three parts or components for science: axiology, methodology, and theory or factual claims. Axiology which deals with aims has impacts on methodology and theory. Axiology justifies methodology and

provides a reference with which the theory or factual claims should be congruent. This impact is not of course one-way, rather it occurs like an interaction.

Laudan has talked about epistemic and non-epistemic values. The former includes coherence, precision in prediction, and probably simplicity (this one might be considered by others as an aesthetic value). Accordingly, a theory that has got these epistemic values would be preferred to one that lacks them. Non-epistemic values, like Kuhnian expediencies, refer to going habits and conventions within the scientific community. These values are determinative in the content and direction of scientific activities. Thus, the scientific community is completely influential in considering some subjects as unscientific and excluding them from being studied, while they might be emphatically considered as scientific by a different scientific community in a different time.

1.2.5. Non-linear Progress of Science

Another feature of the new perspective of science is that post-positivists do no longer believe in the cumulative and linear progress of science. This does not necessarily indicate that they do not accept progress in science whatsoever. Rather, it might still be held in a non-linear way in which rivalry of theories has an important room.

Lakatos explains the progress of science in terms of long run research programs. According to him, one should no longer believe in 'instant rationality'. In other words, it is not atomic hypotheses that confront with experimental realm, rather a set of related theories within a research program undertakes this responsibility. Both progress and regress should be sought in the long run when a research program has

tried its potentialities. Short-term accesses or failures are not determinative in the fate of scientific theories.

In addition, rivalry of theories has an important room in this idea of progress. Lakatos criticizes the conception that reality affirms or refutes a theory. Instead, he holds that a theory is refuted by another theory that has shown more coherence in its successive endeavors to explain and predict phenomena. If one prefers to talk about the nature's reaction to a theory, he must state it in terms of its reaction to the incoherence within a research program and between its successive endeavors: "It is not that we propose a theory and Nature may shout NO; rather, we propose a maze of theories, and Nature may shout INCONSISTENT. The problem is then shifted from the old problem of replacing a theory refuted by 'facts' to the new problem of how to resolve inconsistencies between closely associated theories."(Lakatos, 1970, p. 130)

Feyerabend and Kuhn, also, disagree with cumulative and linear progress in science. Based on his methodological puralism, Feyerabed holds that rationality of science is not dependent on its exclusive appeal to a certain line of logic. Rather, there could be different kinds of rules that might provide progress in science. In other words, as following some rules might lead to progress, changing them and following a new set of rules could also provide progress. Thus, he states: "The remarks made so far do not mean that research is arbitrary and unguided. There are standards, but they come from the research process itself, not from abstract views of rationality."(Feyerabend, 1978, p. 99) In fact, Feyerabend emphasizes that there is no certain scientific methods and standards that could be used without limits in all the contexts.

In this way, Feyerabend wants to keep his thesis of epistemological anarchy away from the charge of arbitrariness. Thus, he

maintains: "I argue that all rules have their limits, I do not argue that we should proceed without rules…In my polemics I neither want to eliminate rules, nor do I want to show their worthlessness. My intention is, rather, to expand the inventory of rules and also to suggest a new use for all of them. It is this use that characterizes my position and not any particular rule-content."(ibid, p. 164, Italics in the original)

Given that any epistemological view and its relevant methodological rules and standards have their own limits, hegemony of any such view in science can lead to prevent the progress of science. To allow different views to act and to facilitate their rivalry would guarantee the progress of science. Thus, Feyerabend invites us to a 'counterinduction'. He means by this that we should pursue hypotheses that are incongruent with the established theories and their findings (Feyerabend, 1970, p. 26)

Kuhn talks about two kinds of progress; one in terms of normal science, and the other in terms of rivalry among paradigms. In the first state, progress seems more or less linear on the ground that a normal science gives solutions to puzzles according to a particular paradigm's requirements. That is why these solutions have a prototypical character. However, when the paradigm encounter with crisis and increasing counterevidence, progress of science becomes dependent on changing the paradigm altogether and this is what Kuhn refers to as scientific revolution.

By the emergence of a revolution, the previous path of science is blocked and a new path is opened. This indicates that the progress does not go in a linear state. However, it should not be ignored that the new paradigm might explain the phenomena concerned to the old paradigm as good as it did or even better than it. The phenomena would not of course have the same meaning and characteristics as were regarded in

the old paradigm. Nevertheless, this indicates a progress in science though not in a linear way.

1.2.6. Impact of Science on Metaphysics

The final characteristic of science worth mentioning here is the possible impact of science on metaphysics. Having considered the integration of metaphysics and science, what we might mean by this is the impact of empirical component of science on its metaphysical component. The same kind of relation was meant when we talked about the impact of metaphysics on science.

Post-positivists have also discussed on the impact of science on metaphysics. Popper (1965) holds that metaphysical claims could not be falsified by empirical evidence. He does not mean that metaphysical claims could not be falsified by rational arguments either. What is meant here is only that empirical evidence can not falsify metaphysical claims.

Similarly, Watkins (1958) believes that metaphysical claims are neither refuted nor affirmed by experience on the ground that these claims are so general that they are not sensitive to empirical evidence. A somewhat similar view is stated by Wisdom (1987). According to him, ontological components of science are not refutable by means of observation and experience, though they are theoretically refutable.

However, Lakatos talks a bit stronger and admits that refutation might be attributed to metaphysical components, or 'hard core', of scientific theory: "The idea of 'negative heuristic' of a scientific research programme rationalizes classical conventionalism to a considerable extent. We may rationally decide not to allow 'refutations' to transmit falsity to the hard core as long as the corroborated empirical content of the protecting belt of auxiliary hypotheses increases. But our approach differs from Poincaré's justificationist conventionalism in the

sense that, unlike Poincaré's, we maintain that if and when the programme ceases to anticipate novel facts, its hard core might have to be abandoned: that is, our hard core, unlike Poincaré's, may crumble under certain conditions. In this sense we side with Duhem who thought that such a possibility must be allowed for; but for Duhem the reason for such crumbling is purely aesthetic, while for us it is mainly logical and empirical."(p. 134, Italics in the original)

This statement indicates that hard core, with its metaphysical contents, is refutable, particularly where Lakatos talks about the transmission of falsity to the hard core. His argument is that when the hard core of a research program is not able to provide successful predictions in the long run, this shows empirically and logically that it is refuted.

It seems that 'refutation' is not used in this argument in the strict sense of the word. In other words, it is likely that Lakatos means the hard core is shown to be unable to produce good hypotheses. When a hard core is not generative, it could and should be abandoned, since it is useless, but strictly speaking, it could not be claimed that it is empirically refuted.

Laudan (1984), also, has discussed about the impacts of empirical dimensions of scientific theories on their metaphysical dimensions. He has tried to consider a two-way relationship between empirical claims and aims or axiological orientations of research traditions. He has labeled his view as 'reticular model'.

To explain his view, Laudan first criticizes Kuhn on his being trapped into a 'covariance fallacy'. By this term, Laudan means that it is a fallacy to think that all parts of a research tradition change at once. As mentioned before, these parts, according to him, include axiology (aims), methodology, and theory (empirical claims). In the above-

mentioned fallacy, it is believed that these three parts are influential hierarchically and in a one-way path; that is, aims influence on methodology and this, in turn, influence on theory or empirical claims. Accordingly, the difference between two theories in empirical claims is due to the difference in methodology which itself is due to difference in aims or final values. In addition, it is supposed in the fallacy that these parts are deeply connected to each other so that they change at once altogether.

Attribution of this fallacy to Kuhn is because of the idea of 'revolution' in which a total and foundational change occurs so that the researcher enters into a totally different world that is 'incommensurable' in relation to the world of previous paradigm. Laudan believes that the charge of extreme relativism to Kuhn's view is rightly due to this fallacy (p. 50).

In contrast to this hierarchical relation and covariance, Laudan appeals to 'reticular' relation and steady replacement. Reticular relation indicates that the three parts of a research tradition have mutual dependency and non of them could be prior to other two parts in a fixed way. Rather, on the one hand, aims justify methods and are in congruence with empirical claims. On the other hand, methods show the capacity of aims for being actualized and justify empirical claims; as empirical claims limit methods and exemplify aims.

With regard to the reticular relation among the parts, Laudan talks about a two-way impact. So far as the impact of empirical claims on aims is concerned, some new empirical evidence might show that the aims or values could not be actualized, or that non of the going theories in the scientific community is an exemplification of the aims. In such a situation, researchers might decide to modify the aims and values or replace them by others (p. 77).

On the whole, the impact of empirical contents of scientific theories on their metaphysical components seems clear and acceptable. The former could lead to partial changes in the latter or abandoning them altogether. However, as mentioned before, strictly speaking it does not indicate that empirical content refutes metaphysical claims. As Agassi (1959) says, science might lead us to consider some metaphysical claims as 'outmoded', but it could not be said that they are refuted.

Chapter Two

Religion
and
Religious Knowledge

Introduction

To give an account of religious science, other than explaining the characteristics of science which was done in chapter 1, we need also to explain the characteristics of religion and religious knowledge or understanding of the world. The latter is going to be done in this chapter.

In dealing with the nature of religion and religious knowledge, two conceptions will be discussed and criticized. The first will be called 'Encyclopedic conception' of religion that assumes the religion to be comprehensive as including all kinds of knowledge and science. The second conception, being at the extreme point in relation to the first conception, will be referred to as 'functional conception'. In this view, religion and religious knowledge is regarded to be as a function of some variables that are human konwledges and sciences.

Having discussed these two views, we will suggest an alternative conception that will be called 'distinctive conception' of religion and religious knowledge. It is held in this view that religion and religious knowledge has a distinctive characteristic in relation to other kinds of knowledges. This conception of religion, along with the preferred conception of science prsented in chapter 1, paves the ground for talking about religious science in the last chapter.

2.1. Encyclopedic Theory of Religion

The first approach regarding the nature of religion and religious knowledge is called here encyclopedic theory. According to this conception, religion includes all knowledge necessary for the humankind happiness. This is particularly the case where a religion is regarded as the most completed religion. In other words, it is held that the perfection of a religion requires it to include all truths about the universe.

There could be two versions for perfection of religion in terms of its inclusiveness of truths. These versions could be called strong and weak versions. According to the strong version, every bit of true knowledge is present in the scriptures. This presence is not, of course, necessarily explicit, rather it might be implicit. Thus, it is held that even if we have no access to some kinds or parts of knowledges in the explicit statements of religious texts, they are somewhere in the substrata meanings of these texts that need deep interpretations.

On the other hand, the weak version does not require that every bit of true knowledge be present in religious texts. Rather, it is held that merely general principles of all kinds of knowledges, including principles and foundations of all sciences, are stated in these texts.

Application of the encyclopedic view in the realm of religious sciences will be discussed in the last chapter of the book. It suffices here to mention a case of the proponents of this view. Referring to the weak version of the encyclopedic view, Javadi Amoli (1372), among others, says: "The religion has not been viewless or neutral in relation to any one of general or particular sciences, rather in relation to each of them, it gives generalities and principles that could be the source of derivation of other derivatives." (pp. 81-82) In another case, he regards these generalities and principles as 'comprehensive foundations': "The religion…has taught comprehensive foundations of many experimental, industrial, military and the like sciences." (p. 78)

The encyclopedic approach to religion and religious knowledge does not seem defensible. It seems that a fallacy is involved in the argument of this view in relation to the perfection of religion. In this fallacy, a confusion has happened between the two concepts of comprehensive and functional perfections. Function is used here in the biological sense in which it is supposed that an organ has a particualr

role to play with regard to the whole condition of the organism. One might talk about the perfection of a religion but in the functional sense without there being a need to consider a comprehensive perfection. The latter indicates that for being perfect, a religion should include all the truths of the world. However, in the former conception, it is held that a religion could be perfect in playing its particlar role. This conception presupposes that religion has a particular function consisting of leading the humans toward God. A religion that includes relevant cognitive, emotive, and behavioral components for leading the humans toward God, it should be considered as a perfect religion. In other words, the perfection of religion is functional rather than being comprehensive in including all truths of the world whatsoever.

A further problem is that the comprehensive view leads to some doubts on the divine wisdom in creating the two different worlds of human intellect and the religion. The divine wisdom has required a division of labour in the world so that neither of the two elements of the human intellect and the religion includes the other.

This is not, of course, to indicate that the human intellect and the religion have no overlaps or common grounds. Rather, the claim is that the human intellect and the religion have partial independence of each other and that neither of them could make us needless of the other. To deny this partial independence of the human intellect and the religion leads to unacceptable consequences. One such unacceptable consequence is that the religion in itself is sufficient for analyzing and solving all human problems. It is evident that this is not the case.

The other unacceptable consequence is that the human intellect is capable of performing all the roles played by the religion. The evidenc show that this is not the case either. In different places of the human history it is claimed that having philosophy or science, we do not need

religion. However, the religion is still with the humans not weaker than what was in the past times. This indicates that the religion does for the humans what philosophy or science cannot do. The result is that, as far as the human needs are concerned, the intellect and the religion should be considered as complementary.

2.2. Functional Theory of Religion

This theory takes religion and religious knowledge or understanding to be functions of some variables. Function is used here in the mathematical sense.

Functional view on religious knowledge rejects two things about this knowledge or understanding; distictive nature and objectivity. As far as the former is concerned, the claim is that religious knowledge, being a function of some variable, cannot have a distinctive nature, rather it always relies on other kinds of knowledges. As for the latter point, it is claimed that there is not an objective and fixed meaning for religious texts, rather their meanings are plastic and varied relative to the viewpoints of the interpreters.

The functional view on religious knowledge has derived from the radical hermeneutical approach. Some have classified hermeneutical approaches to different parts. Gallagher (1992), for instance, talks about four tendencies in hermeneutical views: Conservatives like Schleiermacher, Dilthey, and Hirsch who believe that there is an objective truth in a text that could be achieved by means of good methods of interpretation; moderates like Gadamer, Ricoeur, and Betti who hold that interpretation is always creative and there is always a dialogue between the interpreter and the author or, as Gadamer puts it, a 'fusion of horizons'; radicalists like Neitzsche, Heidegger, and Derrida who

emphasize on creativity of interpreters and cast doubt on the possibility of achieving the real meaning and even on the existence of a real meaning for a text; and finally criticals like Habermas and Apel who hold that we can become more awar about the tradition and be immune to idiological and social biases by means of critical reflection.

The radical trend in hermeneutics, in particular, has led to the rejection of any kind of objective meaning for texts in genral, including religious texts. This view is completely examplified in Derrida's deconstructionism. Where deconstructionist theory represents a doctrine rather than a mere methdological significance, it relies on three assumptions: omnitextuality, plasticity, and equivalency (Rescher 1997, p. 198). By omnitextuality, it is meant that any proposed interpretation of a text itself is another text and there is no way out of texts. Plasticity indicates that there could be different interpretations for a text. And finally, equivalency refers to the equal merit of different interpretations.

The result of applying the radical hermeneutical view in religious texts is to negate objectivity as well as distinctiveness of religious knowledge. In fact, it is held that, what is stated as a piece of religious knowledge or understanding does not refer to intentions or meanings hidden in the religious texts, rather it refers to a particular interpretation derived from a certain interpreter and his or her background knowledges. This is to say, in other words, that there is no religious knowledge as such within the religious texts, rather they are opaque and could only become transparent by means of a certain interpreter's point of view and background knowledges.

<u>Recognizing Three Hermeneutical Levels.</u> The radical approach needs to realize and differentiate levels involve in hermeneutical activity. It seems

that there are at least three levels for understanding meanings in dealing with a text. These levels will be referred to as: talking of the text; making the text talk; and talking on behalf of the text.

Level 1: Talking of the Text

At the first level, talking of the text is concerned. Generally, any wirtten text is being shaped in order to express or transfer some intentions. In fact, this is one of the basic presuppositions of any kind of hermeneutics that the author has an intention and tries to express it. As it is generally accepted that coherence is one of the presuppositions of any interpretation, this also seems necessary to presuppose that the author has an intention and tries to express it. This intention is, in fact, the speech of the text.

Stated in terms of 'question/answer', one might say that what is going on at this level is that both question and answer belongs to the author or the text. In other words, the author has regarded a question and tries to introduce it and answer to it as well. The meaning involved at this level is intended to be clear as far as possible. That is to say, the author tries his or her best to draw the nearest way to his or her intentions. To put in Rescher's term, the meaning is 'producer-centred' at this level. Thus, we can ask at this level: "What does the text mean for its author?"(Rescher 1997, p. 207) This question indicates that the text transfers, in the actural fact, certain meanings. Because of these characteristics, the reader should be a good listener to be able to achieve the intended meanings.

Level 2: Making the Text Ttalk

At the second level, interpretation and understanding deals with hidden or implict meanings of the text. In this state, the text looks like a

thing or being that has certain dispositions. The concept of 'disposition' refers to the characteristics of the thing or being that are not apparent, nevertheless, they are present in it as potentialities that could become apparent in certain conditions. This is like sugar's disposition of solvability in water which is not apparent but nevertheless it is there in sugar and could become apparent when it is poured in water. There is a big difference between a hidden characteristic and a non-existent characteristic. While the two are common in not being apparent, the former could appear in certain conditions, whereas the latter could not. In the example of sugar, it lacks both the characteristics of being solved in water and thinking; however, the former is a hidden and the latter a non-existent characteristic for it.

This is worth mentioning that the meaning at the second level, like the first level, is producer-centred. In other words, it is the author or the text that talks at this level but the difference is that at this level the meaning should be drawn out of the text. The speech of the text at this level is like a hidden characteristic which needs certain conditions to appear. These conditions consist of new situations with new problems before the text. Stated in terms of "question/answer", we might say that at this level, the reader asks questions and the text answers.

The hermeneutical question suitable to this level is: "What can the text mean for us?" This question indicates that the text has had a potential meaning in it. At this level, in order for achieving the hidden meanings, the reader should be a good questioner. Asking suitable questions and asking questions suitably with regard to a text show the art of a good questioner. In addition, the reader should also be a good interpreter. This is because in dealing with hidden and implict meanings of a text, one should be careful in gathering textual evidence in supporting a meaning.

Level 3: Talking on Behalf of the Text

Unlike the two previous levels, at this level, meaning is reader-centred or, just to use Rescher's term (because he has not discussed about this level), consumer-centred. In other words, it is the reader who wants to enter an intention or meaning in the text; the intention or meaning that the author has not attempted to express explicitly or implicitly.

The difference between this level and the second level should not be overlooked. The difference between this level and the second level should not be overlooked. In the latter, the speech belongs to the text even though it is drawn out form it by means of questions, whereas in the former, the speech belongs to the reader but it is attributed to the text.

Stated in terms of 'question/answer', what is going on at this level is that both question and answer belong to the reader but their bearer is the text. The proper hermeneutical question here is neither that of the first level (What does the text mean for its author?) nor that of the second level (What can the text mean for us?); rather, it will be a question like this: "What meaning does the text tolerate?" This question indicates that the reader can have different meanings of his or her own so that only some of them are tolerable by the text. 'Tolerance' is used here in its medical meaning referring to a stranger element that enters into an organism but is not in so contrastive relation to the orgamism that its rejection becomes necessary.

Tolerance could also be understood in terms of disposition or capability: capability of tolerating stranger elements. However, this conception is different from disposition at the second level. In the latter, capability referred to having a hidden meaning and showing it, whereas

in the former, it refers to having tolerance before a meaning that has come from outside.

At the extreme point, talking on behalf of the text could appear as attributing irrelevant meanings to the text. In other words, at this point, the reader does not concern about the threshold of text's tolerance; rather, he or she imposes on the text whatever interpretation he or she is interested in. This kind of hermeneutical activity is not acceptable on at least two reasons. Firstly, the author or the text does not have any commitment on the endless meanings that might appear for the text's words in the future. There are only three kinds of commitments for the author or the text: apparent commitment with regard to the first level of hermeneutical activity; hidden commitment with regard to the second level of this activity; and finally, implicit commitment with regard to the third level at its first layer. However, as far as the the second layer of the third level, or its extreme point, is concerned, there is no commiment from the author's or the text's side.

The second reason is that the meanings of a word that might appear in the future could be contrastive or contradictory in relation to each other. This fact, in itself, is not problematic. A word might have certain meanings in an era and quite contrastive ones in another. However, so far as a certain text is concerned, it is not acceptable to attribute contradictory meanings to it. In fact, coherence is one of the presuppositons of the hermeneutical activity.

2.3. Theory of Selectivity of Religion

The third conception about religion and religious knowledge regards a selected nature for them. This conception is clearly different from the two previous conceptions. As explained above, in the first conception, religion is considered as full and comprehensive in being

inclusive of all truths and sciences. On the other hand, in the second conception, religion is regarded empty and functional in being dependent on other knowledges. However, in the third conception, religion and religious knowledge is somewhere in between because it is held that religion has chosen a particular view or message to present to the human without there being any commitment for telling everything or being silent of telling anything at all.

In relation to the selected nature of religion, first the distinctive nature of religious knowledge along with the particular role of religion in human life will be explained. Then, the characteristics of religion and religious knwoledge will be explained in details.

2.3.1. Distinctive Nature of Religious Knowledge

The first point regards the particular role that religion is committed to play in the human life and the distinctive nature of religious knowledge in relation to other kinds of knowledge.

The particular role that religion has committed to play is to guid the human toward God. This intention could be seen throughout the religion and the scriptures. All religious teachings, as well as personal and social duties determined, are organized according to this intention. In this section, religious teachings will be focused on to show the distinctive nature of religious knowledge.

David Carr (1994, 1996), among others, has tried to show that there are distinctive religious and spiritual truths. In other words, spiritual truths cannot be put under categories of other truths, like those of natural science, mathematics, moral knowledge and so on. According to Carr, while some religious claims are expressed directly, others are of necessity indirect or metaphorical. By this he does not mean that metaphorical language is distinctive of religion; rather, it is only

necessary to some religious expressions. However, he states that there are distinctive religious truths.

He gives four examples of what is stated in the Bible to display the distinctive character of this type of truth. These examples are as follow:

1. "Man does not live by bread alone."

2. "No man can serve two masters."

3. "What does it profit a man to gain the whole world and lose his soul?"

4. "Sufficient unto the day is the evil thereof."

Mackenzie (1998), in a critical review of Carr's claim, has stated that the four examples are not distinctive truths; rather, they belong to other braches of knowledge. Mackenzie claims that the first example refers to a statement which belongs to social-scientific knowledge, namely knowledge of ourselves and other minds. In this knowledge, it is shown that human beings have, other than physiological needs, psychological, emotional, social needs and the like. Concerning the second example, he states that it belongs to logical and formal knowledge. In this case, his calim is not so clear because it is not certain that "one servant for one master" is a formal and logical claim unless we presuppose that the two masters have contradictory claims that could not be compatible. Finally, he believes that the two last examples belong to moral knowledge on the ground that they deal with values (value of the soul) and matters of evil or good.

Before evaluating the details of Macknenzie's claim on these four examples, it is worth concentrating on the meaning and criterion of distinctiveness of a realm of knowledge. For a realm of knowledge to be distinctive, it is not necessary that the realm is quite separate from other realm without any kind of overlapping. This point seems to be acceptable

to Mackenzie as he has well argued for a non-avoidable overlapping among different branches of knowledge (Mackenzie 1985). What is required, instead, is that there should be, in addition to the shared parts, either a distinctive part for an autonomous realm of knowledge or a new form composed on the common parts.

For instance, given that mathematics and morlity are two distinctivie realms of knowledge, it might be the case that ethical statements include criteria distinctive of mathematics, as 'four' virtues were discussed by Aristotle. As far as these virtues are 'four' they could not be understood without appealing to mathematics. However, what makes a statement ethical is, for instance, a criterion to the effect that the deeds of a person be due to his or her will or sense of responsibility.

The same point can be said in the case of religious knowledge. It might be the case that religious statements include some cirteria or standards of other branches of knowledge, say, mathematics, science, and philosophy. For instance, when we discuss the Thrinity, whether affirmatively or negatively, we have presupposed mathematical standards. However, our statement does not belong to mathematics; rather, there is something in the statement which makes it distinctive of religion and, as will be explained below, it is speaking about God.

Hodson (1973) has rightly stated that the pivotal point in (theistic) religious discourse is God. Hence, in almost all religious statements, God is referred to explicitly or is presupposed one way or another. This is exactly what makes some statements distinctively religious though there might be some common elements among religious and other kinds of knowledge claims.

Now, we can concentrate on the four above-mentioned examples of distinctive religious cliams. In the first example, we read: "Man does not live by bread alone." Being a religious claim, this sentence presupposes

God. Thus, the full statement will be something like this: "Man has a divine origine, hence, his or her satisfaction could not be brought about merely by means of bread (by satisfying physiological needs)."

Now, contrary to Mackenzie's claim, it is clear that this statement does not belong to social-scientific knowledge. This is because, relying on experience and observation, science cannot verify a statement that includes a reference to the divine origination of the human. Sciences like psychology and sociology can, at best, show that there is a pressing need in the human beings to something which is called 'spiritual' or that there are religious institutions in all societies. However, neither of these sciences deal with the claim that human beings have a divine origin which plays the main role in satisfying them. No doubt, findings of these sciences could be used as a piece of evidenc for supporting the religious claim that the humans have a divine origin even though it is not sufficient for proving the claim. This, again, shows that there could be some overlapping areas (in subject matter, methods, or evidence) among different kinds of knowledge without its being threatening for their being distinctive.

The second example states: "No man can serve two masters." To be religious, this statement should also presuppose God. Thus, it indicates that human's heart cannot be a place for God's love and, at the same time, love for one's belongings or relatives so that they could not be compatible with belief in God.

There is a similar statement in the Quran: "Allah sets forth an example: there is a man in whom are (several) partners conflicting with one another, and there is another man wholly owned by one man. Are the two alike in condition? All Praise is due to Allah. Nay! Most of them do not know." (Zumar: 26) It is stated here that love of God and love of earthly things are not compatible. Contrary to Mackenzie, the point is not

a merely formal one; rather, the content is important here, and what is involved in this content is relation to God and that is what makes the statement religious. Surely, as far as the formal aspect is concerned, namely the claim that two oppositional things are not compatible, Mackenzie is right. However, the point is that religious knowledge does not deal merely with formal characteristics of statements; rather, their contents that should be on some relation to God are concerned.

This is somehow similar to the relation between mathematics and physics. While the former deals with abstract characteristics of things, the latter regards material things themselves. It is clear that physics could not be reduced to mathematics, though physics relies somehow on mathemaics. Similarly, while religious claims, having formal characteristics, rely on mathematics or logic, these claims could not be reduced to the formal knowledges on the ground that content, in addition to form, matters for religious knowledge.

The third and fourth examples were these statements: "What does it profit a man to gain the whole world and lose his soul?"; "Sufficient unto the day is the evil thereof." Mackenzie claims that these statements belong to moral knowledge. However, if again we take God as the pivotal point in religious discourse, there would be some doubt to regard the statements as belonging to moral rather than religious knowledge. Having seen in this way, the third statement, in fact, indicates that the human soul has a divine origin and its real value could be realized only through its relience on God rather than on temporary things that the person possesses. In the religious literature, it is usually held that the human sould ignores its value by ignoring its origin, namely God, as it realizes its value by remembering God. There is a similar statement in the Quran as follows: "And be not like those who forsook Allah, so He made them forsake their own souls; these it is that are the transgressors." (Al-

Hasher: 19) Stated in this way, the third example has obviously a religious rather than a merely moral content.

Likewise, in the fourth example, what is concerned is an apparent good which turns to an evil, but again the criterion here is relation to God. In other words, relying on immediate pleasures of things, the person regards them as good and tries to obtain them even at the price of breaching the borders of guilt. However, at the time of God's judgment, the pleasures transforms to evil. We might consider again a similar case in the Quran: "Who amasses wealth and considers it a provision (against mishap); He thinks that his wealth will make him immortal. Nay! He shall most certainly be hurled into the crushing disaster." (Al-Humazah: 2-4) Understood in this way, the fourth example shows its real content and it is clear that it should be regarded as a religious (moral) claim rather than merely moral.

The analysis of above-mentioned examples shows that how God is presupposed in them. Where the notion of God explicitly or implicitly constitutes a part of a statement, it is clear that it does not belong to any branch of science. Nor is it belong to philosophy. Neither the discourse of science nor that of philosophy necessarily focuses on God. While, for instance, natural sciences deal with what is happening in the world as 'occurrences', theistic religions look at them as 'actions' of God. It is clear that statements containing phrases that indicate this type of looking at the world do not belong to natural sciences, nor are they verifiable in these sciences.

Similarly, philosophy even in its metaphysical sense, let alone new conceptions of philosophy, does not concern, first and foremost, with God. It could happen that a philosopher speak about God in his philosophy, but it is not necessarily the case. It follows that religious

statements are not included in other branches of knowledge; rather, their realm is distinctive.

2.3.2. Characteristics of Religion and Religious Knowledge

Having considered the general point of distinctiveness of religious knowledge, we are going now to explain characteristics of religion and religious knowledge in more details.

Recognizing Three Areas in the Scriptures. The first point is that, according to the selected nature of religion, there are three areas in religious scriptures: central, middle, and borderline. The central area includes the teachings, values and rites of the religion. In other words, this area includes the basic contents of the religion and they are what make relgion religion. In fact, these contents are what religion has chosen to tell the human. Thus, as far as possible, these teachings are stated in a clear way.

The following example which has three parts correspondent to the three areas is from the Quran. The first part refers to one of the basic teachings of Islam, namely the unity of God in being as well as in authority: "Blessed is He in Whose hand is the kingdom, and He has power over all things." (Al-Mulk: 1) In this teaching, God is introduced as the unique ruler in the whole universe being omnipotent who has no rival. Even though this point is stated in a brief verse, it is stated clearly. There are, of course, detailed expressions of this point in other places of the Quran; nevertheless, the clarity of this brief verse is evident.

The middle area of the scriptures includes peripheral points. These points are not regarded as the basic teachings of the religion, rather they are used in order for strengthening the basic teachings. Thus, these kinds of points are usually stated along with the basic

teachings and because of not being basic, they are stated very briefly. The brievity is due to the fact that these points are regarded as evidence supporting the basic teachings. The second part of the above-mentioned example from the Quran shows a case of the contents of the middle area. Following the statement indicating the unity and omnipotence of God, it is stated: "Who created the seven heavens one above another." (Al-Mulk: 3) In reference to God's management in the universe a hint is given on seven heavens and their order. No doubt, there are plenty of truths about the heavens; however, this verse refers only to one aspect of them, namely their order and arrangement. This point being relevant to the main statement on God's unique ruling in the universe is stated briefly without referring to other truths about the heavens.

Finally, the third area of the scriptures is a borderplot area. The reason for calling this area borderplot is that it is a common area between the scriptures and the world of people who are adressed by them. This area includes the common sense beliefs along with arguments based on them. In this area of the scriptures, the basic teachings of the central area are defended by appealing to common sense beliefs and relevant arguments. The third area has an important role to play in showing the characteistics of the religion which will be explained further below. To follow the above-mentioned example from the Quran, its third part need to be taken into account: "you see no incongruity in the creation of the Beneficent God; then look again, can you see any disorder? Then trun bach the eye again and again; your look shall come back to you confused while it is fatigued." (Al-Mulk: 3-4)

As it is clear, the people are asked here to look at the phenomena around them in terms of their unitary order and to conclude that the basic teaching of God's omnipotence is acceptable.

Religion Has a Clear Language. The function of the third area of the scriptures is so important; it plays the role of a clear language for religion. In fact, as it was mentioned, this peripheral area is a common realm between the religious scriptures and the people's world who are addressed by them.

The first two areas include the claims that are debatable but the third area, relying on common sense and relevant arguments, looks like a connecting link between religious teachings, on one hand, and people's other kinds of beliefs. This realm is called a common area on the ground that it provides an intellectual language between unreligious people's world and the main content of the religion. To call this area a common area indicates that people, using their common sense arguments, might provide this connecting link and, hence, in confronting with religion accept its teachings immediately. However, even if they do not take this step, the religion itself paves the ground for doing it and by appealing to common sense introduces its basic teachings.

This clear and common language plays a plenty of roles for religion. One of these roles is to explain the necessity of religion for the human. Having a common area with non-believers, the religion tries to show why the humans need religion. The other roles include explaining the basic teachings of the religion, shaking the foundations of false beliefs, and reply to the challenges of unbelievers. These kinds of explanations constitute the third area of religious scriptures. The following two examples are cited from the Quran in explaining the necessity of religion and in reply to the challenges of unbelievers respectively. The first example is this: "Certainly Allah conferred a benefit upon the believers when He raised among them an Apostle from among themselves, reciting to them His communications and purifying them, and teaching them the Book and the wisdom, although before that

they were surely in manifest error." (Ale-Emran: 164) The second example refers to a challenge on resurrection: "And he strikes out a likeness for Us and forgets his own creation. Says he: Who will give life to the bones when they are rotten? Say: He will give life to them Who brought them into existence at first, and He is Cognizant of all creation." (Ya Seen: 78-79)

Given that religion has a clear language and, using it, talks about its own necessity and its teachings, it follows that religion itself takes a role in providing presuppositions of religious understanding. Thus, it is not acceptable to claim that religious understanding is possible only when its presuppositions are provided by different kinds of human knowledge. With regard to the functions of the third area of religious scriptures, it is clear that it is actually one part of the religion's duty to provide suitable presuppositions for understanding and knowing it.

<u>Relations between Religious and Human Knowledge.</u> Relying on the third area of religious scriptures as a common area between religion and non-religion, we might use the model of peninsula to explain the relations between religious and human knowledge. In other words, different kinds of knowledge, including religious knowledge, are like peninsulas that have a common access to the land and, at the same time, have differences and particular characteristics.

The analogy of peninsulas shows that there are commonalities as well as differences between religious and human knowledges. As far as the commonality is concerned, the third area, including common sense and related arguments, plays the main role. This is actually the connecting link that relates all the branches of knowledge to each other and paves the ground for possible exchanges.

The second relation between religious and human knowledge concerns the rejection of contrary thoughts. Using the explanations in the third area, the religion sheds light on its basic teachings and thereby its agreement and non-agreement with other thoughts becomes clear. As a result, the religion begins to reject and falsify the contrary thoughts and beliefs that might appear in the domain of some knowledges like philosophy. The basic teachings of religion is like a hard core that resist against the contrary beliefs.

The third relation appears between religious knowledge and homogenous human knowledges. Those philosophical and gnostic views that are homogenous with a religion's basic teachings begin to use their insights to deepen these teachings by means of relevant terminologies and skills. Given that the homogenuty is accepted, these knowledges are not usually used in a way that the religious teachings be transformed or deviated. However, depending on different interpretations, this might be controversial in some cases.

The fourth relation is between scientific knowledge and religious knowledge. This relation appears particularly between scientific knowledge and the second area of religious knowledge. Given that this area includes brief hints to the phenomena of the world, detailed scientific knowledge could be used to make the brief hints of the scripturs clarified. With regard to the brievity of these hints, it would not necessarily be known whether the detailed versions of the religious knowledge by means of some scientific theories are in fact true or not.

On the other hand, exactly because of this brievity, when contradictions appear between the scientific findings and religious knowledge, the removal of the contradiction could be done more easily. This is because a brief and ambiguous statement could be compatible with different possible interpretations. In the end, as it was explained

before, the contents of the second area have not a central position in the religious knowledge and that is why they are ambiguous. In other words, their brievity and the resultant changes of interpretations about them do not harm the main purpose or the basic teachings of the religion.

Finally, the fifth relation concerns the orientations that religious knowledge mihgt give to human knowledges. When homogenuty appears between religious knowledge and human knowledges, a two-way relation could be expected: the impact of human knowledges on religious knowledge and vise versa. The first kind of relation was hinted above to the effect that human knowledges deepen religious knowledge. The second relation refers to the possible influence of religious knowledge on human knowledges. The basic teachings of religion, particularly belifs and values, are the influential sources for doing this. This influence appears more in the realm of theory and theorizing than in the realm of methodology. This is because methodologies of these branches of knowledge are well established during their long histories. However, in the dimension of theorizing, the researcher always needs a source of inspiration. The contents of religious teachings could be regarded as presuppositions for certain kind of theory and theorizing. At the same time, as far as these presuppositions change the image of the subject of a study in the mind of the researcher, they could have some impacts on methodoloy on the ground that the image of subject is one of the sources for developing methods of study. It is also worth mentioning that the second area of religious scriptures might inspire some kinds of theorizing in the realm of experimenal sciences.

Chapter 3

Meaningfulness and Meaninglessness

in Religious Science

Introduction

Two points should be noted about the phrase of 'religious science' as it is used here. First, experimental science is meant by 'science', rather than science in general, and second, only human sciences are concerned, rather than all branches of experimental sciences. Hence, wherever the phrase of 'religious science' is used, cases like 'Islamic psychology' is concerned.

The main issue in this chapter is whether 'religious science' a meaningful phrase or it should be regarded as meaningless. In case of meaninglessness, it does not indicate a conceivable concept; in the same way as the phrase of 'square circle' has no determinate meaning. Thus, any proposition composed of 'religious science' would be meaningless as well and, hence, neither true nor false, as is the case with propositions like "The sum on the angels of a square circle equals 360 degree".

According to versions of two epistemological positions, the phrase of 'religious science' is meaningless. The first position is epistemological monism and the second epistemological pluralism. It is meant by epistemological monism that knowledge through and through has a unified and cogent structure based on its experimental characteristic. Accordingly, religion is in principle outside of science realm and could not be considered as knowledge; hence, religious science becomes evidently meaningless. This position is taken by logical positivism and pragmatism.

Epistemological pluralism, on the other hand, holds that knowledge has not a unified structure, rather, it is divided into different parts, each part having its particular structure. In this position, pluralism has in fact a doctrinal feature, that is to say, it regards the borders of

different parts of knowledge non-removable and, hence, the plurality is radical and serious. According to this position, religion might be considered as a part of knowledge having its particular characteristics; however, the phrase of religious science is meaningless on the ground that it conflates two distinct parts of human knowledge.

These two epistemological positions on the meaninglessness of religious science will be discussed and criticized in this chapter. Finally, an alternative view will be suggested under the title of 'methodological pluralism' (as contrasted to the doctrinal pluralism) according to which religious science could have an acceptable meaning.

1. Epistemological Monism and Religious Science

As it was hinted above, epistemological monism holds that human knowledge could not divided into different realms, each having distinct principles and methods for dealing with knowledge. Rather, on this view, knowledge has a unified structure without encountering an epistemological gap requiring different principles and methods for knowledge seeking.

This position has taken strongly by logical positivists and pragmatists. These two versions of the epistemological monism will be discussed briefly below.

1.1. Logical Positivism: Meaninglessness of Religious Science

Logical positivists led to the view that the only meaningful propositions constituting human knowledge are synthetic propositions. In these propositions, the subject and the predicate are combined as two independent concepts and the result is a proposition whose truth or falsity could be determined by means of observation and experiment. They held that all scientific propositions are synthetic.

Although logical positivists regarded analytic statements as meaningful as well, they did not considered them to have cognitive features. Accordingly, analytic statements are tautological and do not give us any kind of knowledge about the universe even though they are meaningful and valid.

Other than synthetic and analytic statements there are no meaningful statements. Based on positivists view, all the statements composed of religious, metaphysical, and ethical concepts are either nonsensical or mere expressions of inner emotions and sensations. Anyhow, these kinds of statements are neither true nor false.

Monistic aspect of logical positivism refers to the view that knowledge through and through is constituted of synthetic propositions and, hence, has a unified structure. Furthermore, the scientific method has also a monistic feature and that is why all scientific statements should be verified by appealing to experimental method. Monism or unification had still more depth in the view of positivists on the ground that they were trying to provide a unified structure for all sciences by reducing concepts and propositions of human sciences to physical or physiological concepts and propositions (Ayer, 1936).

Positivists' view requires that 'religious science' be considered meaningless on the ground that religious statements are not regarded as meaningful and, in effect, 'religious' could not be considered as a relevant attribute for science. Still, there might be a weaker position here by appealing to Reichenbach's (1938) distinction between 'context of discovery' and 'context of justification'. As far as the former is concerned in the scientific endeavor, it is allowed that anything could have influences on the mental activities of scientist including metaphysical, mythical, and religious views. However, in the 'context of justification' it is only experience and experimental evidence that determines whether or

not a hypothesis should be accepted. Accordingly, in this context the only relevant attribute for science is 'objective' rather than metaphysical, mythical, or religious. It could be concluded that although Reichenbach admits that non-scientific views, including religion, could have some influences on science in the discovery context, the phrase of 'religious science' is not meaningful altogether because all the hypotheses of the scientist should be verified by experience.

1.2. The Significance of Positivists' View

What could be said in evaluation of the positivists' claim on the meaninglessness of religious science? At the present, after devastating criticisms on logical positivism, it has been clear that this view has been mistaken about the demarcation between science and other braches of human heritage. Positivists' epistemological monism has been the result of ignoring the role and significance of the realms other than science.

To consider metaphysical, moral, and religious statements as nonsensical merely on the ground that they are not similar to scientific claims was not a mistake that would have needed a long time to be pointed out. Popper (1965) soon declared that his falsifiability theory should not be considered as a theory of meaning indicating demarcation between meaningful and meaningless statements, rather, it should be merely regarded as a theory for demarcating between scientific and non-scientific statements without the latter being nonsensical. Not only was it the case that positivists' view on non-scientific knowledge was mistaken, but also their view on science was not accurate either. As explained in chapter 1, philosophers and historians of science have shown in different ways that we cannot consider scientific theories as constituted merely of observational statements (Quine 1951; Kuhn 1969; Wisdom 1987). To see that positivists' claim on meaninglessness of religious science is

based on their indefensible view about religious knowledge, on one hand, and their non-complete picture of science, on the other, validity of their claim is essentially under doubt.

Concerning Reichenbach's suggestion and its requirements on religious science some points should be made. His distinction between context of discovery and context of justification provides some room for the influence of religion on science in the context of discovery. However, his final claim would be that science could not be considered as religious because of the determining role of context of justification in which observation and verification is essential. The following points could qualify Reichenbach's suggestion.

1. First, Reichenbah's two-parts division on scientific endeavor has been under scrutiny. This division indicates that logical aspects of science are devoted merely to the context of justification and what happen in the context of discovery are mainly psychological. Hanson (1971) has claimed that logical features are involved in the context of discovery as well. In other words, the distinction of discovery-justification is ambiguous because when we say that someone has discovered something, this indicates that he has gained some knowledge on it and this indicates some kind of justification.

2. Second, the inadequacy of this two-parts division has led some to talk about three-parts (Laudan 1980) or four-parts divisions (Goldmann 1983). In the three-parts division, these phases are held in scientific endeavor: generation, pursuit, and acceptance. In the phase of generation, a hypothesis or the embryo of a theory is generated; in the phase of pursuit, plausibility of the hypothesis is evaluated and it might be detailed; finally, in the phase of acceptance, the detailed hypothesis is examined and because of sufficient evidence is accepted. Goldmann adds

two phases to the first two phases mentioned above: phases of 'test' and 'decision' (Hoyningen- Huene 1987)

3. Third, a question could be raised about the relationship between the two contexts of Reichenbach: Does any inversion occur to what transfers from the context of discovery to the context of justification? In other words, given that a hypothesis is under the influence of a religious view in the context of discovery, does it leave its conceptual dependence on the religious view by entering into the context of justification? If answer is in affirmative, then the two phases of Reichenbach are not complete and should be completed by adding a third phase between the two contexts having the function of rubbing off the dependencies of the hypothesis to its source and preparing it for entering into the phase of justification.

However, does the experimental justification indicate such a function? Affirmative answer to this question leads to a paradox to the effect that the context of justification negates the context of discovery: If it is the case that the context of justification rubs off the influences appeared in the context of discovery, then it follows that the context of discovery is redundant. To remove this paradox, the model of Reichenbach turns into a model that includes only the phase of justification and this brings him back to the orthodox positivists and puts him at the exposure of criticisms raised against them.

It seems, however, that the role of experience in the context of justification is like the role of a balance and what comes from the context of discovery is like goods that should be weight. A balance only shows the weight of goods, rather than analyzing and inverting them. Surely, the owner of the balance (the scientist) could decide after weighing to invert the goods (hypotheses) or to put them aside altogether, but the balance itself (experience) does not perform the job.

There is no doubt that the experience is the ruler of the context of justification and that all hypotheses are subject to its judgment, rather than to metaphysical or religious presuppositions. However, it is not the case that the hypotheses lose their conceptual dependence on their presuppositions. They are judged along with their dependence ropes on their presuppositions, whether or not they are regarded as valid in this judgment. The validity of a hypothesis, at best, is determined by means of experience, but the hypothesis validated owes its validity to both its presuppositions and the experience. In the town of experience, all the dwellers talk in the same language, namely experience, but not with the same accent. Why the accents are different? This is because each of the dwellers of this town has its own origin and has come here from a distinct place. Thus, they could not easily hide their accents and that is why there are so many theories in each scientific discipline.

Now, it seems necessary to give some examples from what actually goes on in the realm of science to show the dependence ropes of theories to their background views or presuppositions. Two examples will be given here from well-known psychological theories; Skinner's behavioral and Piaget's cognitive theory.

Skinner's behavioral theory, as he has admitted himself, has been under the direct influence of the American philosophy namely pragmatism. At first, Skinner was influence by the views of logical positivists. When Herbert Feigle, the important member of Viena Crircle, went to the United States in 1930s, he introduced the works of his friend P. W. Bridgman. Skinner was profoundly influenced by Bridgman's book 'The Logic of Modern Physics' (1972) and tried to use his then new suggestion in operational definition known as operationalism.

There was similarities between his operationalism and American pragmatist philosophers. Their difference is that pragmatists relate the

meaning of a sentence to particular human interests and to behaviors shown for realizing these interests (Edwards 1967, vol. 7-8, p. 240). Skinner, later on, parted with logical positivists and emphasized on his pure pragmatist position. Referring to Carnap and Feigle, he refused the kind of operationalism that admits logical definitions and insisted that we need only the kind of operationalism used by Watson, namely concrete operationalism (Day 1970). Skinner took a behavioral orientation under the influence of operational and preagmatis philosophy of his society and, in effect, his concepts and hypotheses in psychological investigation show a pragmatic inclination as they are stated in an explicit behavioral language.

Now, the question is this: Are those hypotheses of hers that are supported by experimental evidence in the context of justification have lost their initial conceptual dependence to pragmatism? The answer is evidently no. This is because what happens in the context of justification is merely that, at best, some supportive evidence appears for the hypotheses concerned.

The second example is related to Piaget's cognitive theory. Although he has also published his findings by relying on the supportive evidence for his hypotheses, the dependence ropes of his psychological theory to Kant's philosophy could not be overlooked. Piaget (1972) himself has repeatedly declared his Kantian orientation in psychological theorizing. There are four dependence ropes between his theory and Kant's philosophy.

Firstly, Piaget has followed Kant in giving a formal account of the functions of thought. In a similar way to Kant's dealing with categories as a priori, Piaget talks about initial schemas in the human psychological development that appears, according to him, as biological mechanisms in the first steps.

Secondly, Piaget, like Kant, considers the empirical element as a basic feature of human knowledge. In Kant's terms, formal categories are empty without sense data, and in Piaget's terms, the interaction between pre-existent biological schemas and empirical elements leads to psychological development.

Thirdly, Piaget, like Kant, holds a teleological orientation, that is to say he accounts for the behavior in terms of its end state. Piaget (1980, p. 72), of course, because of his biological inclination, translates teleology into a biological language and talks about teleonomy. Accordingly, behaviors of an organism seek a final state by means of mechanisms of equilibration.

Finally, Piaget, like Kant, in dealing with underlying mechanisms of rational action, talks about reflectivity. Referring to reflective judgment, Kant gives an extensive meaning to human reason and regards it as the seeker for certain laws that can interpret experience. Likewise, Piaget (1980, p. 90) talks about mental activity of 'reflective abstraction' by which the mind can reorganize what have been abstracted from lower levels. (Jackson, 1987)

Having considered the deep engagement of Skinner's psychology with pragmatism and that of Piaget with Kant's philosophy, why should not we consider the former as a pragmatist psychology and the latter a Kantian or neo-Kantian psychology? If so, then we should hesitate on Reichenbach's view on limiting the influence of non-scientific backgrounds on scientific theories to the context of discovery, rather it seems quite reasonable and compatible with what actually happens in the development of scientific theories to hold that this kind of influence transforms to the context of justification.

Now, if some religious thoughts show considerable influences on concepts and hypotheses of a scientific theory and, according to what was

explained above, these influences transfer to the context of justification, then why should not we consider it as a religious science?

4. One might say that Reichenbach's insistence on limiting non-scientific influences to the context of discovery is in order to emancipate science from relativism. In other words, if we want to refer to some theories as pragmatic, and to some others as Kantian or religious and the like, then this maneuver makes scientific theories relative to ideologies and philosophies, whereas the validity of science is dependent on experience.

In order to deal with this problem properly, we should distinguish between different kinds of relativism. We might, for instance, distinguish between epistemological and epistemic relativism, or to put in Bhaskar's (1979, p. 73) terms, between judgmental and epistemic relativism. Whereas the former indicates that all kinds of beliefs are equally valid, the latter holds that all beliefs have somehow dependent to their social backgrounds. From these two kinds of relativism, what threatens science, and in fact all kinds of human knowledge, is the former rather than the latter. If we hold that all theories are equally valid, no matter what criteria are used, this destroys sciences altogether. However, when we claim that all scientific theories have conceptual dependencies to some background views and that when they are supported by experimental evidence, they keep those influences within them, this by no means threatens scientific validity. Of course, this shows that different background views could provide confirmable contents for scientific theories, and this, in turn, indicates that these different views have led to valid theories. In other words, validity is not devoted solely to one view, rather it is distributed in different amounts among different views. This kind of relativism is exactly what is going on in scientific endeavor.

The latter kind of relativism indicates that the complicated nature of reality, whether physical or human reality, is not easily captured as a whole by one kind of views and presuppositions. Rather, what happens is that any kind of presupposition, due to its strengths in guiding scientific endeavor, can capture one part of the complicated reality. The judge among all scientific theories is no doubt experience, but this judgment does not require initial conceptual dependencies of theories to be put aside. As it is evident, objectivity of scientific findings is not regarded here to be absolute. We need a moderate account of objectivity that could be fair to both experimental evidence of theories and their dependence to their background views.

Thus, scientific theories objectivity does not prevent their being dependent to some background view. Returning to our discussion on religious science, we can conclude that if a scientific theory is called religious because of the initial influences of a religious view on its concepts and hypotheses, this does not lead to the threatening kind of relativism. The kind of relativism that it requires is epistemic relativism that is present everywhere in scientific endeavor.

1.3. Pragmatism: Meaninglessness of Religious Science

The second position in epistemological monism belongs to pragmatists. This position also requires that religious science be regarded as meaningless.

Peirce's version of pragmatism is mainly a theory on meaning and in this regard has similarities with logical positivism. According to this version of pragmatism, operational definitions of words and statements are essential for having meaning. Any word or statement is meaningful if it could be defined operationally and, in other words, be empirically measurable. This kind of pragmatism regards any kind of valid

knowledge as reducible to experimental knowledge; that is to say, the valid knowledge is experimental knowledge or any knowledge that could be operationally defined and defended.

Dewey, like Peirce, regarded knowledge as experimental knowledge. He holds that experimental method is a method that could be used throughout knowledge without encountering a sudden gap (Dewey, 1970, p. 23). In other words, there are no epistemological gaps within the realm of knowledge, rather, there is a kind of unity throughout the knowledge, and as far as method is concerned, the method of experimental knowledge could be used everywhere.

Quine has also taken a similar position. Following the antecedent pragmatists, he somehow distinguished his experimentalism from that of logical positivists. Quine (1951) has accused the latter of holding two dogmas. The first dogma refers to analytic/synthetic distinction. This distinction indicates that there is a clear cut difference between analytic and synthetic statements and, in effect, there are two kinds of truth; the first being a truth in terms of meaning of the words and the second a truth in terms of experimental evidence. The second dogma refers to reductionism or atomistic inclination; that is to say, any statement could be individually verified in terms of experimental evidence.

Negating the first dogma, Quine claims that our knowledge statements could not be divided into two branches; one being true by definition and the other by means of experimental evidence. Instead, he holds that all our knowledges are essentially experimental. In fact, our analyic and logical activities are also parts of our whole body of knowledge which is basically experimental.

In negating the second dogma, Quine takes a holistic position. Accordingly, he claims that we cannot distinguish between observational and theoretical statements and by reducing the latter to the former

conclude that observational statements could be verified individually. Based on his holism, the whole body of our knowledge is like a 'seamless web' without there being any gaps in it, even thogh some of them (logical and mathematical statements) are at the center of the web and far from being in near touch to the experimental evidence, and others (observational statements) are at the peripheral points of the web and in near touch to sensual world.

Anyhow, even though pragmatists are not in agreement with empiricist experimentalism, they still regard knowledge, in principle, as experimental knowledge. It is worth mentioning that Quine has regarded epistemology, which was traditionally a brach of philosophy, as a branch of experimental science. Ho hopes that experimental psychology could provide answers for epistemological questions and make "epistemology naturalized". (Quine 1969)

Taking the whole body of knwoledge to be experimental, this kind of monism in pragmatism requires that religious science be regarded meaningless. Religion as the bearer of a divine knowledge cannot be a suitable attribute for science on the ground that scientific findings are based on experiment.

It is worth mentioning that Dewey has shown some tendencies to use the concept of God for providing a unity and coherence in our thinking. However, the concept of God has found a pragmatic feature in the framework of his naturalism. Thus, Dewey says that there is a big difference between what he means by unity and what is meant by it in gnosticism. The difference is that Dewey's unity has no symbolic feature to refer to something metaphysical, rather, it is quite natural and moral. In other words, this unity and this concept of God is active and pragmatic. (Dewey, 1939, p. 1025)

1.4. The Significance of Pragmatists' View

Evaluation of pragmatists's view on meaninglessness of religious science relates mainly to their more general claim on epistemological monism based on experimental science. To believe that over knowledge is through and through experimental prevents us from considering an interaction between science and other sources like religion. But, to what extent is it defensible to hold that our knowledge is basically scientific and experimental?

Critics of Quine, particularly Putnam (1982), has cast doubts on this belief. Concentrating on Quine's 'epistemology naturalized' thesis, Putnam has tried to show that limiting epistemology to scientific criteria, and in other words reducing epitemology to science, makes epistemology in principle impossible. Epistemology requirs us to take a transcendental or second order position and this indicates that there is a philosophical knowledge which is not at the limits of experimental knowledge. We might state this point in a different way: To performe an experimental work in psychology of perception requires some presuppostions of epistemological kind on the nature of mind.

This is also worth mentioning that Quine's holism was at the first step radical and then turned to a moderate holism. In his radical holism, Quine (1951) regarded the whole body of science (icluding philosophy and logic), rather than individual statements, as the unit of science. That is to say, the whole body of science has observable consequences. However, in his later works, Quine (1960) talked about a moderate holism in which two changes could be seen. The first change is that observational testability is a matter of degree and, hence, some statements could be tested individually. The second change is that even though there is continuty in the whole body of science, but we cannot consider observable consequences for the whole body of science. In fact,

the peripheral points in the knowledge web, namely observational statements, have observable consequences (1975a, p. 313).

Finally, among the contemporary pragmatists, Richard Rorty (1991) has cast doubts on the privilage position of experimental science in relation to other branches of human knowledge. Having inclinations toward post-modernists, Rorty avoids from providing a meta-narrative position for science, as well as for other parts of human heritage. In fact, he prefers to put science, philosophy, literature, and the like, beside each other, rather than providing a hierarchy with some of them on the top and others at the bottom. Even though Rorty (1991, p. 202), because of his materialistic and atheistic inclination, would avoid accepting a combination between religion and science, but his emphasis on undermining the meta-narrative position of science parts him with monist pragmatists.

2. Epistemological Pluralism and Religious Science

Epistemological pluralism refers to the claim that the realm of human knowledge is not unified and homogeneous, rather, it includes different areas with different characteristics. Depending on how this difference is accounted for, at least two kinds of pluralism could be considered: contrastive and overlap pluralism.

In contrastive pluralism, a categorical separation among different areas of knowledge is held, so that going out of an area and intering another one involves encountering a different kind of knowledge with different kinds of evidence and methods. On the other hand, in overlap pluralism, the categorical separation is denied and some kinds of overlap among different areas of knowledge is admitted.

In relation to religious science, the contrastive pluralism would indicate that the phrase of religious science is meaningless. Howevere,

overlap pluralism provides the background for giving an account of meaningful religious science. These two kinds of views will be explained in what follows.

2.1. Contrastive Pluralism: Meaninglessness of Religious Science

As it was hinted above, contrastive pluralism regards different areas for knowledge without there being homogeneuity among them. This position has taken by neo-orthodox theology, Existentialism, and Oxford analytic philosophy.

Among neo-orthodox theologians, Karl Barth, the most important Protestant theologist of twentieth century, held that science and religion have different characteristics in subject-matter, method, as well as purpose or end (Galloway 1973). As for subject-matter, religion (Christianity) deals with God's manifestation in Gesis Christ, whereas science deals with nature. Also, in the case of method, religion considers intuitive ways for knowing God as the most important method, whereas science uses intellectual methods for knowing the nature. Finally, as far as the end or purpose is concerned, religion wants to draw the human beings attention toward God, whereas science tries to know the nature experimentally.

Religious Existentialist philosophers have also considered a contrast between religion and science. Here, too, the contrast is meant extensively in subject-matter, method, and end. Martin Buber (????), for instance, considered the subject-matter of religion as the particular relation between God and the human that he termed as "I-Thou" relationship. This relationship indicates a personal and direct relationship between the human and God. On the other hand, in science, there is another kind of relationship between the human and the nature that he termed as "I-It" relationship.

Accordingly, the method would also be different. In religion, because of personal relationship between the human and God, there will be a kind of method which we might consider as participation or personal involvement. However, in science, namely in I-It relationship, personal involvement is not possible and the researcher uses methods of observation and experiment. In other words, the researcher is spectacler rather than player. Finally, the end or purpose is also different. Religion seeks the encountrance between the human and God as the end, whereas science considers knowing and controling the phenomena as the goal.

Analytic philosopher of Oxford have also usually taken a contrastive position in the relation between religion and science. Studying ordinary language, they have pointed out that there are different language games each with its own rules. Talking about different language games provides the background for taking different areas of human life to have contrast relations. The later Wittgenstein, distinguished between experimental and grammatical propositions. The former are descriptive that refer to facts, whereas the latter are normative in which rules are important. Thus, Wittgenstein (1974, p. 184) holds that grammer is not dependent on reality, rather, grammatical rules initially determine the meaning and to that extent are arbitrary. The normative nature of language provides the background for language games. Each language game has its own rules and, hence, meanings. To confuse the rules of different language games will lead to providing meaningless statements. For instance, if we say, "2 plus 2 is sinful", we have stated a meaningless sentence. This is due to a confusion between the concepts and rules of two different language games, namely morality and mathematics.

Different language games are related to different "forms of life". Actions and interactions of the human have led to different form of life,

like science, religion, literature, and so on. There might be a kind of similarity among some forms of life, like the similarity among the members of a family ("family resemblance"). Nevertheless, each language game has its own particular rules so that confusing the rules of different language games lead to meaninglessness.

Thus, the contrastive pluralism takes the phrase of religious science to be meaningless. Religion and science have different laguage games and talking about a religious science indicates that a conrusion has occurred in using their rules.

Paul Hirst (1970), among others, have brought the idea of contrastive pluralism to the realm of knowledge. Following Wittgenstein's forms of life, he talks about forms of knowledge. He has referred to seven forms of knowledge: Logic and mathematics, physical sciences, knowledge about mind and others' minds (including history and social sciences), moral knowledge, eastetic knowledge, religious knowledge and philosophical knowledge. Each of these forms of knowledge has distinguishable cognitive structure with distinct forms of reasoned judgment and, thus, should be regarded as a unique manifestation of the human reason. (Hirst, 1969, p. 151)

As it is clear, the criterion for distinguishing a form of knowledge is a particular kind of reason and evidence that it uses for determining the truth or falsity of its statements. Where Hirst refers to the unique characteristic of a form of knowledge he actually takes the position of contrastive pluralism. Because of this uniqueness and because of distinct kind of evidence in each form, confusing concepts and methods of different forms leads to providing meaningless statements. Thus, Hirst (1974) claims that combinations like "Christian physics" is meaningless because of confusing two different realms of knowledge. When Hirst considers religion as one form of knowledge, he means, in fact, the

scientific study of religion. But, as far as religion in terms of scriptures' content is concerned, he is reluctant to considere it as a distinct form of knowledge. Rather, he prefers to consider it as Geography or a hybrid knowledge composed of different parts of different forms of knowledge (Hirst, 1965, p. 46).

A further case in regarding a contrastive relation between religion and science could be seen in Donald Mackay's (1974) works. He criticizes two views on the relation between religion and science and suggests a third viewpoint. In the first view, a "supplementary" relation is held between religion and science. This relation indicates that one might use religion's explanations for filling in the gaps of scientific explanations. This shows that, according to this view, the explanations of religion and science are of the same kind and this is exactly what Mackay concentrates his criticism on. According to him, this view confuses two different kinds of explanations.

In the second view, an absolute separation is supposed between religion and science. It is meant by this kind of seperation that the explanations of religion and science are not of the same kind, and, furthermore, these expalnations are not about the same subject matter. Thus, there could not be any kind of exchange between religion and science. Mackay critisizes this view because of its excessive position on separating religion and science so absolutely.

Referring to his preferred position on the relation between religion and science, Mackay talks about "complementarity". It is meant by this word that religion and science have different explanations of the same subject matter. In other words, religion and science might talk about the same thing but their expalnations are different. Thus, the concepts and explanations of religion and science are not of the same kind and therefore they could not be combined as it was supposed in the

supplementary view. However, they could be beside each other and considered as two distinct but, at the same time, complementary expalnations of the same phenomena. In order for these two kinds of explanations to be complementary, there should be four provisos. First, the two descriptions should be about the same thing. Second, each one of the descriptions of the common subject should or could be comprehensive. Third, the two descriptions should be stated differently. And fourth, preconditions for using the concepts in the two descriptions should be mutually exclusive so that the aspects of the phenomenon stated in one of the descriptions should be necessarily excluded from the other.

Even though Mackay rejects total contrast between relgion and science, his own view on complementarity is also a kind of contrastive pluralism. That is why, according to this view, there could be no exchange between the two kinds of explanations and that these two explanations could solve no problem for each other, even though they altogether could better solve problems of the human. Given this contrastive relation between religion and science, Mackay's view could be calssified under the contrastive pluralism and, hence, it could be predicted that this view regards 'religious science' meaningless.

2.2. Significance of Contrastive Pluralism

Contrastive pluralism in its more general form has been encountered considerable criticisms. The important versions of this general form that belong to Ludwig Wittgenstein (with regard to forms of life), Peter Winch (with regard to cultures in the realm of social science), and Thomas Kuhn (with regard to paradigms in natural sciences), among others, have been under elegant scrutnies. These scrutnies meet the particular form of contrastive pluarlism regarding the relation between religion and science.

One of the criticisms on contrastive pluralism in general is that this kind of pluralism does not admit external critique. Jarvie (1970, p. 235), for instance, has argued against Winch in this way. According to Winch (1958), for criticizing a culture, one should understand it and this requires that one be present and live within the culture. This indicates that critique could have only an inner figure. In other words, one can criticize a culture by appealing to its inner criteria. However, Jarvie claims that there is no reason for limiting critique to its inner form, particularly because there have been interesting external critiques on cultures and theories and this is a fact that Winchian view could not account for.

Another critique against contrastive pluarlism is that it involves contradiction. Criticizing Kuhn, Toulmin (1972), for instance, states that "incommensurability" of different paradigms in Kuhn's view indicates that these paradigms are not comparable to each other: "...the proponents of competing paradigms practice their trades in different worlds…Practicing in different worlds, the two groups of scientists see different things when they look from the same point in the same direction." (Khun, 1970, p. 150) Toulmin's point is that in order for being a competition between paradigms there should be something common between them. Otherwise, what does competition means? Thus, he concludes that scientific revolutions requires some kind of commensurability between paradigms, rather than incommensurability.

Donald Davidson's (1974) "argument from translation" does the same thing in criticizing the contrastive view. Davidson claims that in order for there being plurality among different views, there should be some kind of translatability among them. This argument includes these seven steps (Fay, 1996, p. 84):

1. To claim that others live in a different conceptual world from us is to claim that they speak and think.

2. To claim that others speak and think we need to know that they ae actually saying something, rather than producing noises.

3. To know that others are saying something we need to know at least some of what they mean.

4. To know what others mean we need to be able to translate their utterances into our language.

5. But to translate their utterances we need to ascribe to them various beliefs, desires, attitudes, and ways of connecting these mental elements.

6. But to ascribe such mental elements to them we must assume that they share with us a background of common beliefs, desires, and principles of thought, that we live in the same world.

7. But to have a shared background of epistemic capacity, belief, and principles of reasoning is to live in the same world as they do.

Thus, Davidson claims that talking about different and contrastive "conceptual schemes" could be considered as a third dogma (in addition to Quine's two dogmas). Davidson's argument undermines all kinds of contrastive pluralism including Kuhn's incommensurability between competing paradigms.

It is worth mentioning that Davidson's argument does not necessarily rejects Quine's "indeterminacy of translation". In fact, he is in agreement with Quine to the extent that tranlatability does not require that there be 'deteminate rules' for exact translation between two system of thought. Nevertheless, his argument undermines any claim to the effect that different cultures, theories, or paradigms have quite different worlds so that they could not be compared to each other.

The above-mentioned critiques against the general form of contrastive pluralism are also against the particular form of it in relation between religion and science. If so, then this view sould meet these cirtiques. Thus, the claim that talking about 'religious science' is necessarily meaningless does not seem defensible. In what follows, the other kind of pluralism, namely overlap pluralism, will be explained and according to it, the plausibility of meaningfulness of 'religious science' will be defended.

2.3. Overlap Pluralism: Meaningfulness of Religious Science

As far as overlap pluralism is a kind of pluralism, it accepts, like contrastive pluralism, that there are different realms for knowledge so that they could not be reduced to one kind of knowledge without remainder. However, unlike contrastive pluarlism, this kind of pluarlism because of its overlapping characteristic considers some common areas among the different realms of knowledge.

First, some points should be metioned about the pluarlistic aspect of this position. Differences among realms of knwoledge could be relevant to subject matters, as well as methods and kinds of evidence. For instance, if we consider natural science, moral knowledge, and religious knowledge as three realms of knowledge, then three kinds of subject matter could be regarded for them: Natural science deals with material things, moral knowledge studies human action in terms of regarding moral rules, and religious knowledge looks at beings in their relaiton to God. Pluarlism in subject matter indicates that different entities are studied in different realms, as we might say that the subject matter of natural science is non-volutional state of affairs, that of moral knowledge is volutional state of affairs in terms of moral rules, and finally in religion it is the state of affairs in relation to God.

When we direct our attention toward the overlapping aspect of this pluralism, the point is that there are common areas among the different realms. In other words, findings or knowledge elements of these realms penetrate in one another. Returning back to the above-mentioned example, we might say that some knowledge elements of natural science enters into the realm of moral knowledge. Regarding the individuals physical or mental capabilities, findings of natural and social sciences tell us what actions 'could' or 'could not' be done by an individual. On the other hand, in moral knowledge we deal with what 'ought' or 'ought not' be done by the individual. Given that what 'could' or 'could not' be done is relevant to what 'ought' or 'ought not' be done, then some parts of natural and social sciences enter into the moral knowldege.

This is also the case in relation between natural science and religious knowledge. For instance, it is one of the findings of natural sciecnes that the waters of two seas related to each other are not becoming completely mixed. This bit of knowledge becomes a religious knowledge when it accomedates to the criterion of religious knowledge, namely relation to God. Thus, when the above-mentioned fact is considered as the 'action of God', it turns to a bit of religious knwoledge. In this case, it is stated in the Quran: "He has made the two seas to flow freely (so that) they meet together. Between them is a barrier which they cannot pass. Which then of the bounties of your Lord will you deny?" (Al-Rahman: 19-21)

Another example of penetrating some knowledge of a realm into another one is in relation of metaphysics to science. It is not the case that we can build a wall between metaphysics and science, rather the fact is that metaphysical knowledge penetrates into sciences. As it was explained in chapter 1, Wisdom (1987) has clearly shown this point in analyzing the structure of scientific theories. He talks about three parts: empirical

content, embedded ontology, and unembedded ontoloty. To give an example, in Freud's theoy, it is presupposedt implicitly that the human is an instinctive animal and not more (unembedded ontology). At the same time, Freud tries to explain all psychological states by explicit appeal to life and death instincts (embedded ontology). Finally, Freud talks about phases in the mental development of the human like the oral phase in which the child's pleasure concentrates around his mouth (empirical content). What Wisdom considers as the ontology in the body of scientific theories refers to the penetration of metaphysics in science.

What was explained above shows that in the case of subject matter there are overlap areas among different realms of knowledge. This is the case also in relation to method and evidence. As far as the plural aspect is concerned, we could say that different realms of knowledge use different kinds of methods and evidence. For instance, in mathematics and logic, analytic methods and evidence concerning coherence or contradiction is important, whereas in natural sciences, observational methods and experimental evidence play the main role, and in religious knowledge, interpretational methods and textual evidence are pivotal points.

However, as far as overlapping aspect is concerned, methods of different realms of knowledge could also show overlaps. Thus, it could not be uttered that religious knowledge does not use observational methods and evidence, or that natural sciences do not use iterpretive (hermeneutical) methods, or that neither religious knowledge nor natural sciences do not use evidence concerning coherence. Therefore, there are penetrations and overlaps among different realms of knowledge in cases of methods and evidence. Nevertheless, in each realm, only some kinds of methods and evidence are basic and play the vital role and it could be said that the distinguished entity of each realm depends on them.

Having explained the characteristics of overlap pluralism, we now bring it to the main area of our discussion, namely religious science. It should be initially emphasized that religious knowledge and religious science, unlike their apparent similarity, do not refer to the same thing in our discussion. Religious knowledge refers to the knid of knowledge that could be seen within the religious texts. As explained above, one of the main characteristics of this knowledge is that it talks about states of affairs in their relation to God. However, the term religious science refers to the possibility of providing experimental (mainly social) sciences that could be labled as religious as Islamic psychology and the like.

Relying on overlap pluralism, we can give, in principle, a meaningful account of religious science. The adverb 'in principle' indicates that logically it seems plausible to talk about religious sciences, but whether is it possible to provide a religious science, 'in practice', it could not be decided a priori. To consider this point a posteriori means that it depends to the possibility of there being that kind of religious knowledge in certain religious texts that could take part in the body of a scientific theory and provide influences on its development.

Relying on Wisdom's above-mentioned view, we can claim that in order for talking meaninfully about religious science, it is sufficient that we can provide a system of some religious knowledge and use it as the embedded and/or unembedded ontology of a scientific theory. These presuppositions or ontologies of a theory should guid us in giving hypotheses about the phenomenon concerned and, subsequently, the hypotheses could provide experimental evidence. As it was explained before in criticizing Reichenbach's view, given that the influence of religious bliefs transfers from the context of discovery to the context of

justification, it is quite reasonable to lable the resultant theory as religious.

Thus, a scientific theory could be called religious if it has taken a penetrating influence that goes continuously from hypothesis formation to hypothesis affirmation. In other words, it is sufficient for a scientific theory to be religious that its theoretical content be inspired by a certain religious knowledge. However, in the case of method, science is science and works with its basic method namely experience and experimental evidence. If one means by religious science to provide a science by means of particular method of religion, namely text interpretation, the resultant outcome could be anything but science, because it has not provided by particular scientific method of observation and experimental evidence.

We should not, of course, take 'God's eye' view here. As far as God's knowledge is concerned, it includes scientific knowledge about the world without it to be observational or experimental. Likewise, if a person takes God's knowledge directly, then he or she also would have scientific knowledge about the world without it to be observational or experimental. However, the present discussion is not about God's or the holy men's knowledge. Thus, as far as human knowledge is concerned, the main characteristic of scientific knowledge in the area of method is its being observational and experimental. Even if a person takes a bit of scientific knoweldge from reading a religious text (rather than taking it directly from God), it is not in fact scientific unless the person examines it observationally and experimentally. The (scientific) knowledge taken from the reading of a religious text could be a blief; however, in order to be properly a scientific knowledge, it should be examined in terms of scientific methods.

It could not be denied, of course, that a given presupposed ontology in a thoery could have influences on its methodology and the

kind of evidence. For instance, a psychologist who merely takes behavioral evidence into account, has undoubtedly a relevant presupposition or ontology, as it is also the case for a psychologist who is merely sensitive to congitive evidence. These differences in the area of method and evidence have homogeneutiy with the presuppositions of the theory concerned. Hence, it might be the case that a religious knowledge that plays the role of presupposition of a scientific theory lead to particular influences in the area of its method and evidence.

Nevertheless, the method and evidence of science should be remained basically observational and experimental. The influence of presuppositions should not be so macro in size that negates experience from the realm of science method altogether, because this negates the scientific nature of knowledge as well. Thus, the extent of influence in this area should be limited to micro changes, that is to say to changes within the scope of observational and experimental method.

This insistence on observational and experimental character of method does not necessarily reject using other kinds of methods throughout the scientific endeavor. In fact, we can agree with Feyrabend's "anything goes" in the realm of method. That is to say, a scientist could use any kind of method in his activity. However, to put in Reichenbach's term, as far as the context of justification is concerned, the main method will be observational and experimental, even though throughout the context of discovery, "anything goes".

The nature and characteristics of this concept of religious science will be explained a bit further in the end of the following chapter which is regarded to deal with true and false conceptions on religious knowledge.

Chapter 4

True and False in Religious Science

Introduction

Given that the phrase of 'religious science' is meaningful the question arises that which versions or interpretations of religious science are acceptable and which are not. In this article, two approaches of religious science will be discussed and criticized and in the final step, an alternative view will be suggested; namely the view that was briefly addressed in the previous chpater.

In this chapter, some attempts in the realm of religious (Islamic) science are discussed. Underlying conceptions of religious science in these attempts are formulated and criticized.

The two approaches in Islamic science which are going to be criticized will be termed as inferential and supplementary approaches respectively. Then, an alternative view will be suggested which will be called establishment approach.

4.1. The Inferential Approach and its Critique

The first kind of attempt in talking about Islamic science is termed here as the inferential approach. This approach is based on a particular conception of religion that was termed as encyclopedic conception in chapter 2. According to this conception, religion includes all knowledge necessary for the humankind happiness. This is particularly the case about Islam being the final heavenly religion. In other words, it is held that the perfection of Islam as a religion requires it to include all truths about the universe. On this view, extracting and integrating the relevant scientific points from Islamic scriptures could shape a religious science, like Islamic psychology.

4.1.1. Inferential Approach and its Versions

As far as encyclopedic or inclusive characteristic of Islam is concerned, there are two, strong and weak, versions of it. According to the strong version, every bit of true knowledge is somehow present in the Islamic scriptures whether explicitly or implicitly and in a hidden way. What we need here for formulating Islamic sciences is a deep and elegant interpretation of the Islamic texts. Even if we cannot have access to some knowledge in these texts, it is held that that knowledge is present somewhere in the substrata meanings of these texts and some day they might be known.

However, according to the weak version, it is not the case that every bit of true knowledge be present in the Islamic texts. Rather, what could be found in these texts are merely general principles of all branches of knowledge. Thus, formulating religious sciences requires us to take these general principles and infer the details through our studies in relation to the external world. However, as far as principles and foundations of all sciences are concerned, it is held in this version that they are present in the Islamic texts and that is why we can claim that this version has also an encyclopedic presupposition of religion.

Of these two versions of inferential approach, the latter is mostly supported rather than the former. Referring to this view, Javadi Amoli (1372), among others, says: "The religion has not been viewless or neutral in relation to any one of general or particular sciences, rather in relation to each of them, it gives generalities and principles that could be the source of derivation of other derivatives." (pp. 81-82) He refers to these generalities and principles as 'comprehensive foundations': "The religion…has taught comprehensive foundations of many experimental, industrial, military and the like sciences." (p. 78)

What are called here as 'comprehensive foundations' constitute one part of religious sciences that could be found directly in the religious texts. The other part has an inferential characteristic. In this aspect, it is held that, relying on the comprehensive principles and foundations, we should infer derivatives and particular cases of any branch of knowledge. In this regard, Javadi Amoli says: "It must never be expected that the claim of medicine science being Islamic indicate that all its particular and general formulations be stated, likewise prayer and fasting, in the traditions. As the claim that science of jurisprudence is Islamic has never been meant in this way. This is because there are plenty of rational and reasonable points, as well as many terms of Principles of Jurisprudence, in this accumulated technique that non of them could be touched in the Quran and tradtions." (ibid, pp. 81-82)

A particular case of doing Islamic science according to the inferential approach could be seen in Hussaini's Introductory Study of Principle of Islamic Psychology (1364) and its concise version Islamic Psychology for Students (1377).

Hussaini holds the inferential view in its weak version. As stated before, according to this version, the religion includes comprehensive principles of all sciences. Referring to this, he says: "Leaders of Islam have given principal leadings in case of sciences that concern the humankind and have left the details for the researchers of any discipline. As the science of Principles of Jurisprudence has been formulated by appealing to the Quran, the tradition (theoretical and practical manners of the Prophet of Isalm and the Islamic leaders peace be upon them), intellect, and consensus, Islamic psychology, Islamic economics, Islamic education, Islamic morality and other sciences concern to the humankind could also be formulated in the above-mentioned way." (Hussaini, 1377, p. 7)

Hussaini has tried to formulate Islamic psychology in this way. Relying on Islamic texts, he has regarded the spirit as the subject matter of Islamic psychology. Subsequently, he has suggested a structure for human personality, including three parts, by appealing to the Islamic concepts of Aqle (intellect), Fitrah (innate structure), and Shahvah (passions).

4.1.2. Critique

The inferential approach in religious science could be criticized on both religious and scientific sides. On the religious side, the encyclopedic conception does not seem defensible on the ground that religion has a particular function consisting of leading humans toward God. In other words, the perfection of religion is functional rather than being comprehensive to the effect that it includes all truths of the world whatsoever.

In addition, this kind of comprehensive view on religion, requires some doubts on the divine wisdom in creating two different worlds of human intellect and the religion. God has created these two distinct worlds in a way that neither includes the other. This is not to claim that the intellect and the religion have no overlaps or common grounds. Rather, the claim is that the intellect and the religion have partial independence of each other and that neither of them could make us needless of the other. Thus, as far as the human needs are concerned, the intellect and the religion are complementary. Denying this partial independence of the intellect and the religion requires, on one side, to claim that the religion is sufficient to understand and solve all human problems without appealing to the intellect and, on the other side, to claim that the intellect can do the job of religion and make us needless of it.

Proponents of encyclopedic view on religion claim that the Islamic texts have themselves indicated of the comprehensive perfection of the religion (Javadi Amoli, 1375, p. 120). However, the proclaimed evidence are not persuasive. For instance, where the holy Quran states: "…nor anything green nor dry but (it is all) in a clear book." (An'am: 59), it is not certain that the book referred to here is the Quran itself. Perhaps, that is why an indefinite article is used here; 'a clear book' rather than 'the clear book'. And it is quite compatible with the Quranic vocabulary (e.g. Yunus: 61) to think that what is referred to here as 'a clear book' concerns a level of the divine knowledge. In fact, the beginning of the above-mentioned verse persuade adequately the reader that what is concerned in the verse is the divine knowledge: "And with Him are the keys of the unseen treasures—non knows what is in the land and the sea…".

What could be said about the cases where the Quran refers explicitly to itself: "…We have revealed the Book to you explaining everything clearly…"(Al-Nahl: 89)? The answer is that when the Quran states that its role is to guide the humankind toward God (Al-Baqarah; 2), it becomes evident that "explaining everything clearly" refers to everything performing the role of guiding the humankind toward God, rather than literally being everything whatsoever. And this is the meaning some interpreters of the Quran have indicated (e.g. Tabatabai, 1391/1972).

So far, the inferential approach is criticized with reference to its presuppositions on the nature of religion. The second aspect in this critique concerns the nature of science. On the scientific side, this approach confronts a paradox. On one hand, it must admit the dismissal of the hypothetical nature of experimental sciences. This is because what is thought to be the principles (the weak version) or details (the strong version) of the sciences must be accepted dogmatically as the contents of

the Islamic texts. On the other hand, it must hold a hypothetical nature for the statements in the Islamic texts. This is because they are regarded as scientific claims that need to be verified by the the method of science namely experiment.

In addition, what happens in the actual fact is that the direction of development of religious science in the inferential approach is retrospective rather than being prospective. A prospective direction leads to findings whereas a retrospective direction starts with findings. In other words, in the former state, confronting unknown phenomena, a science provides new findings. However, in the latter, starting with scientific findings, a "religious science" tries to provide traces for the findings in the religious texts. Thus, a retrospective direction in science is futile.

Furthermore, retrospective direction is at the exposure of providing an eclectic science in its bad shape. Starting with findings of the sciences, it would be inevitable to fuse statements of the Islamic texts with those of scientific theories. This kind of fusion could be seen, for instance, in Hussaini's (1377) work on Islamic psychology mentioned above. What he refers to as the structure of personality in Islamic psychology is in fact an attempt to correspond some Islamic concepts with the structure of personality suggested by Freud. According to Hussaini, the three parts of personality in Islamic view are Aqle (intellect), Fitrah (innate structure), and Shahvah (passions). These three parts correspond respectively to what Freud termed as Ego, Superego, and Id. In the same manner as Freud referred to Id, Hussaini talks about the principle of pleasure as the dominant principle on Shahvah's activities (p. 58) and its unconscious mechanisms (p. 59).

The second step of correspondence is held between Freud's Superego and the Islamic concept of Fitran: the principle of

perfectionism is dominant in Fitrah (p. 21), conscience is related to Fitrah (p. 26), and there is a basic conflict between it and Shahva (p. 56).

Finally, the third step in correspondence refers to Intellect in relation to Freud's Ego. The dominant principle in Intellect is the principle of reality (p. 64), and the Intellect is neutral and not value-laden (p. 72).

4.2. The Supplementary Approach and its Critique

The second approach in religious science could be called supplementary approach. This is because the main strategy of this approach is that the existing Western sciences should be edified and supplemented. By edification it is meant that non-Islamic or anti-Islamic components of the existing theories should be put aside and instead Islamic components added to them.

Two examples of this kind of attempt that appeared in the Islamic countries will be explained below. The first one is attempted in Malaysia and in an institution in USA and known as 'Islamization of knowledge'. The second example is attempted in Iran in the recent 25 years.

4.2.1. The First Example: Islamization of Knowledge

The phrase of "Islamization of knowledge" was used firt in "First World Conference of Muslim Education" held in 1977 in Mekka. Muhammad Naquib al-Attas (1979) who coined the phrase used it in his article on Islamic education. Also, al-Faruqi (1981) used this phrase in the realm of human sciences. Later on, al-Attas began to develop this idea as a project in 'International Institute of Islamic Thought and Civilization' (ISTAC) in Malaysia and al-Faruqi began a similar work in 'International Institute of Islamic Thought' (IIIT) in USA.

Al-Attas believes that the contemporary Western science, because of its foundational ideas derived from its secular orientation, does not give us the true knowledge. Thus, he says that we should first separate these ideas from the body of contemporary science and then enter Islamic ideas into it and turn it to the true knowledge. Al-Attas (1978) gives this recommendation in more details. He says that the outcomes of Western universities are interwoven with concepts and characteristics of the Western culture. This is particularly the case in the human sciences but in could be traced in the natural sciences as well particularly where they are given by interpretations on the facts in the form of a theory. According to him, we should separate all these elements and key concepts of the Western culture and substitute them with Islamic concepts. The most important Western ideas that should be rejected are: duality of reality and truth; duality of thought and body or the gap between rationalism and empiricism; humanism or secularism, and tragedy in literature.

Al-Attas has also given guidelines in methodology. The methodology of Islamization of knowledge, according to him, is based on interpretation [hermeneutics] with two techniques of "tafseer" and "ta'wil". He believes that these two techniques that are used in understanding the Quran, could also be used in understanding the nature because the nature in the Islamic view has symbolic characteristic like written words.

What al-Attas means by the first technique, namely 'tafseer', is a kind of surface interpretation, whereas the sencond technique, namely 'ta'wil' refers to deep interpretations. Thus, the first technique is used in the case of 'clear' (muhkam) verses of the Quran, whereas the second one is used in the case of 'ambiguous' (mutashabeh) verses. This requires that in using the first technique there would be no room for mental and

personal readings or historical relativism because it relies essentially on the rules of Arabic language, while there could be such things in using the second technique. However, the latter is also a kind of interpretation that looks for hidden meanings of the verses and it could not be arbitrary. In fact, in both kinds of interpretation, reference to other usages of the words and concepts throughout the Quran is essential (ibid, p. 26).

Al-Attas believes that the same techniques should be used in understanding the world because knowledge in Islamic view is regarded as a symbolic interpretation. Thus, the phenomena of the world are divided to two parts; one part including 'clear' phenomena and the other including 'opaque' ones. The former are the 'things' themselves and the latter are hidden meanings beyond the 'things'. Accordingly, the former need (surface) interpretation, that is understanding in terms of apparent and evident empirical characteristics. However, the latter need deep interpretation which is performed by means of providing a unified whole of all phenomena in relation to God. That is why he regards the Quran as the highest reference that can comfirm our rational and empirical enquiries (ibid, p. 39). This deep interpretation could turn the contemporary Western science to a true science.

According to this concept of true knowledge, al-Attas suggests a criterion for truth. He says that mere correspondence with reality could not be considered as the criterion for truth. Rather, the facts and their evidence should be put in the framework of symbolic interpretation of the world and be in congruence with the hidden truth. Accordingly, truth is not merely an attribute for those statements that are correspondent to reality, rather it is at the same time and in principle the characteristic of the substance of the things. Coherence with this substantive truth of the things is the necessary condition for our statements to be true. Otherwise, our findings will be false even though they are supported by empirical

evidence. He gives the example of genetic engineering findings about the human which should be regarded false even though they are supported by empirical evidence. This is because they are organized in a framework of the human entity which is false (ibid, p. 84-5).

Another reason that he gives for showing that correspondence with reality is not sufficient for truth is this: facts might be manufactured by the human and far from their true substance. He concludes that facts could be false and, hence, one should not consider correspondence with facts as the criterion of truth (ibid).

To give a brief reference to al-Faruqi, we should say that his conception is somewhat similar to that of al-Attas. Al-Faruqi (1988) believes that we should reconstruct the modern disciplines in order for them to be Islamized. He suggests that we need to judge on modern sciences, including their aims, methods and findings, by means of the basic concept of God's unity. This Islamic concept indicates that there is or should be a unity in knwledge and truth, in life and creation, in humanity, and in history. We should reconstruct modern sciences by appealing to this Islamic criterion.

4.2.2. The Second Example: A Case Study in Iran

The second example of supplementary view is performed in Iran. This approach was implemented soon after the Islamic Revolution in Iran 25 years ago. Some branches of Hawzeh in Qum, particularly Haqqani School and Cultural Foundation of Baqer Al-uloom, started to study the existing scientific resources of universities in order to edify and complete them. These activities have been continued by an office for cooperation between Hawzeh and universities called Daftar Hamkariye Hawzed va Daneshgah.

The characteristics of this approach have been stated in the introduction of one of the books published by Daftar (1374): "General characteristics of this book could be stated in what follow…b) Introducing Islamic points and concepts with necessary precision and scrutiny and to attempt to introduce the most evident and the most relevant points as the first step in the direction of enriching the existing psychology. c) To attempt to fill the existing gaps in modern psychology and to emancipate it from the tight materialistic frameworks and to introduce new discussions such as will and intellectual choice and to support rational methods and to use knowledge by presence beside pure experimental methods and to enrich some parts that have been considered important in the Islamic culture, such as moral growth and personality growth, and to show the limitations and shortcomings of the existing issues by means of critique."

As these statements show, an Islamic or Islamised science is provided by adding Islamic points to the existing theories in order to fill in the gaps in their structures, and by criticizing and dismissing their false parts. In addition, it is suggested that religious texts could be used for providing new facts in a number of ways:

a) wherever a non-experimental issue (such as spirit) is concerned, we can advance experimental studies by means of dealing with its experimental equivalents (such as bodily states equivalent to the spirit states);

b) in cases of explicit statements on a particular phenomenon, we can directly use them as the subject of experimental or quasi-experimental studies;

c) wherever scientific points are stated in an implicit way, given that our inference is clear, we can access to some findings by analyzing them; however, if our inference is not

clear, then we need to study them by means of other methods [perhaps experimental] and in case of affirmation to accept them;

d) *finally, we can gather particular scientific points of religious texts and related them to suitable hypotheses to provide theories and to determine their truth or falsity by means of experimental methods (ibid).*

Having reviewed the two examples of supplemetary approach to Islamic science, we should encounter critically with them.

4.2.3. Critique

It seems that there are a number of problems with the supplementary approach to religious science.

Firstly, it ignores the systematic structures of scientific theories and their presuppositions, on one hand, and those of religious texts on the other. This systematic characteristic of theories and texts prevent us from dismissing elements of a system and replacing them with elements from other systems without being trapped into providing incoherent systems. In this way, superficial similarities between two different systems are misleading. We might think that because of the similarity we have provided coherent systems, whereas this superficial coherence is shaky.

In what follows, we will refer to this kind of problem in both of the examples of supplemetary approach explained above.

Concerning the first example of supplementary approach, namely 'Islamization of knowledge', there are some such problems in al-Attas's work. As we saw, he regards current epistemology different from Islamic epistemology. The difference is held to be that the former is fact-oriented, whereas the latter is oriented twoard substative truth. He thinks that we

should substitute the contemporary science's orientation with that of Islamic orientation.

It seems that al-Attas has confused two meanings of truth: ontological truth and epistemoloical trth. It might be the case that an existing situation be an alienated or inauthentic situation. This refers to the ontological meaning of truth/falsity to the effect that the existing situation is far from its true or ideal nature. However, when we talk the epistemological meaning of truth, it is meant that a statement is true when it corresponds to facts or reality. The point is that it might be the case that one refers to an ontologically false existing situation and, at the same time, to an epistemological truth. Take this example: Suppose that someone has killed a holy man. The killer's action is ontologically false, that is to say it is an alienated action. However, there is an epistemologically true statement that corresponds to the fact, namely 'He has killed the holy man.'

In addition, al-Attas has overlooked an important point in the case of epistemological meaning of truth. The point is multi-level characteristic of correspondence to facts. Accordingly, a statement might corresponde to certain reality at a level and, thus, be true and, at the same time, at a higher level is combined to some other false statements to refer to a more complicated reality but fails to do so because of the combination done. In the latter case, it does not correspond to reality and, thus, is false. These two levels should be distinguished because the falsity of a system of statements 'as a whole' does not prevents one particular part of it to be true 'as a particular'.

Now, al-Attas's above-mentioned example of genetic engineering could be explained in a better way. He held that the findings of genetic engineering about the human are fale even thogh they are supported by empirical evidence and, in other words, are correspondent to reality. This

is a strang verdict and it is because of ignoring the point of levels. However, relying on the multi-level characteristic of correspondecne, we can say that as far as the findings of genetic engineering correspond to cetain reality, they are true. However, when they are combined to other false statement to capture the whole reality of the human, they fail to do so in combination with those statements 'as a whole'.

Thus, we should not confuse the Islamic view on the ontological meaning of truth with the epistemological meaning of truth which is held to be important in the contemporary science. Still, it is not the case that the criterion of correspondence to reality, understood in its multi-level version, is not acceptable to the Islamic view.

Now, we turn to problems of the second example of supplementary approach, namely the case study of Iran. Take this passage from the above-mentioned source: "Sometimes, appealing to rationalization, one tries to justify his bad action that has led to his anxiety and provide an acceptable interpretation for it. According to some verses of the Quran, the hypocrites and disbelievers sometimes seek refuge in justification. As Allah says: 'And when it is said to them, Do not make mischief in the land, they say: We are but peace-makers.'...(Baqarah: 11) This point probably refers to a kind of defense mechanism. This is because the hypocrites' confession to mischief making and harming society leads to their inner sadness and anxiety and they emancipate themselves from the trap of conscience punishment." (ibid, pp. 479-480)

Given that defense mechanisms, including rationalization, is a part of Freud's theory and is based on unconscious activities of personality, can we be sure that the Quranic verses presuppose this kind of unconsciousness? Presumably, the subsequent verse has made this interpretation plausible for the writers of the above-mentioned passage: "Now surely they themselves are the mischief makers, but they do not

conceive." (Baqarah: 12) However, it should be noted that interpreting the phrase of "they do not conceive" as referring to unconscious rationalization is an attempt being done in the sphere of Freudian theory. Whereas, we might take the verse to indicate that they do not notice the consequences of their actions. Anyway, what concerns us here is only that 'rationalization' presupposes unconsciousness and it is not clear that the Quran has taken such a presupposition for granted. Thus, to mention that verse as a confirmation to defense mechanism of rationalization is to provide an incoherent mixture from points belonging to different systems.

Another problem with the supplementary approach to religious science is to make comparisons with taking pains. In other words, this approach leads to overloading a Quranic verse or a tradition with irrelevant interpretations in order to make it compatible with a successful point in a theory. Again, an example from the above-mentioned source: "Theory: means to gather dispersed information, to formulate and analyze them and to guess about the relations among the phenomena being studied and this is used more or less in all sciences. Access to theory by means of thinking and deepening the data could be inferred from some of [Islamic] traditions." (ibid, pp. 149-150) The tradition concerned is this: "Whoever thinks a lot on what he knows, he makes his knowledge stable and understands what he might not be able to understand."(من اكثر الفكر فيما يعلم اتقن علمه و فهم ما لم يكن يفهم)

However, it is clear that this tradition says nothing about the role of theory in science. What it says is that thinking on what one knows, leads to deeper understanding compared to the previous understanding that one had. How and in what way the ambiguous word of 'understanding' in the tradition could lead us to note the complicated role of theory in science; points like 'theory-ladenness of facts'? One might be able to infer these things but at the expense of taking a lot of pains.

There is still a third problem with the supplementary approach that it leads to a bad defense from Islam. This happens when one puts a brief verse or tradition beside a huge amount of findings in a scientific theory to claim that Islam has also said something in that regard. An example could be seen in the above-mentioned source (pp. 191 & 197) where detailed findings of genetics on DNA and the like are explained and then a brief reference is mentioned to the traditions indicating that some traits of parents transform to the children.

Finally, concerning the suggestion of doing experimental studies or providing theories based on what are stated in the religious texts this question arises: Why should we consider themes of Quranic verses or traditions as the subject of experimental studies? Does this mean that one should consider these themes as hypotheses whereas one believes in their truth? Or is it meant that these be supported by experiments? If so, could they be considered as real experiments required in sciences? This question becomes serious particularly when, referring to theories taken from religious texts, it is stated: "Of course, it should be reminded that if experimental research rejected such a theory, then the problem would have been with the kind of formulation and constitution of the theory (rather than the verses and traditions gathered in it)." (ibid, p. 149)

4.3. An Alternative: The Establishment Approach

Having criticized the two approaches in religious science, we are going to present an alternative view as the establishment approach. A religious science is neither totally present in the religious texts to be inferred, nor is it in a half way present in them to be complementary to some of the existing theories. Rather, a religious science, where possible, should be established. According to this view, given that we can talk

about Islamic sciences, they should be established in the same way as other scientific theories are established.

Underlying presuppositions of this view are of two kinds. So far as science is concerned, a post-positivistic stance is presupposed. As it is explained in chapter 1, the most important characteristic of this stance is that borders between science, on one hand, and metaphysics, values and culture, on the other, are so soft that mutual influences could occur between them.

The second kind of presupposition in this view concerns the nature of religion. It is assumed that Islam as a religion does not include whole scientific theories. Nevertheless, as its necessary components, Islam includes teachings about the universe, human nature and so on. These teachings might have inspirations in establishing hypotheses and theories. These two kinds of presuppositions of the establishment view need to be explained further below.

4.3.1. Presuppositions Concerning the Nature of Science

One part of justifying religious science as a matter of establishment refers to our conception of science. The conception presupposed here is mainly post-positivistic. The important characteristics of this conception are as follows.

Firstly, it is assumed that there is integration between theory and observation in the scientific endeavor (Hanson, 1971). Contrary to positivistic conception, scientific theory is not the result of accumulation of facts. Rather, given that pure observation does not occur, the role of scientist's theory becomes clear which, in turn, shows the importance of cultural and intellectual background of the scientist. Opening up the relation between observation and theory, it becomes possible to talk

about religious science. This is because religion is one of the candidates for providing the context of scientific theorizing.

Secondly, it is assumed that there is integration between science and values (Lauden, 1984). Again, contrary to the positivistic conception, science is not regarded value-neutral, rather scientific endeavor is value-laden and, in a restricted sense, a biased activity. Given that some kind of biases could be and should be avoided for providing objectivity, there is another kind of bias that could not be avoided, rather it is what makes scientific activity possible. Again, it becomes plausible to talk about religious science and this indicates that, given the value system of religion, we can ask what kind of procedures or preferences for thinking follow.

Thirdly, it is assumed that the growth of science occurs through competition among theories and paradigms (Lakatos, 1970; Kuhn, 1970). It follows that not only is it the case that there is no one and the same way for the progress of science, but also this progress requires a battle between rivals. As Paul Feyerabend (1970) has stated in explaining his term of "counterinduction", this requires that one fights even with the dominant type of theorizing in science. This point opens up a further way for religious science, particularly because of the fact that the contemporary science has mostly an anti-religious or at least non-religious tendency in its progress.

Finally, it is assumed that there is a two-way relation between science and its metaphysical background. As far as the influence of science on its metaphysical background is concerned, some have talked about the falsification of this background by science. This characteristic of science makes a problem for religious science: Can we accept that religious science might falsify its religious background?

This concern could be answered in this way. As Popper (1959) and Watkins (1958) have shown, strictly speaking, it is not the case that experimental aspect of science could falsify its metaphysical background. What could be falsified are scientific hypotheses rather than sciences presuppositions. What if it becomes clear that a metaphysical background has not fertility for providing good hypotheses for scientific work? In this case, at most it could be stated that the background is outmoded rather than falsified.

Neither of these two states does lead to a real problem for religion. In the former case, if our hypotheses are rejected by evidence what is falsified are 'our' hypotheses rather than their religious presuppositions because as presupposition, they are of a metaphysical kind that could not be falsified by experimental evidence.

In the second state, where it becomes clear that religious backgrounds do not provide good hypotheses for science, what follows is that the religious backgrounds are not suitable for science development. However, as it will be explained in the next section, this does not show that religion as religion is undermined, rather what this shows is merely that religion could not be considered as a background for science development. In fact, science development for religion would be a side-effect rather than the main effect.

4.3.2. Presuppositions Concerning the Nature of Religion

The second kind of presuppositions of the establishment approach to religious science is related to the nature of religion. Religion is regarded here to have the particular function of guiding the human toward God. This indicates, on one hand, that religion does not deal with sciences in their diverse kinds and their concern about finding laws and applying them in the human life.

On the other hand, there is also the indication that, for playing its particular function, religion gives particular teachings about the universe and the human. If religion deals with knowledge, it is dependent upon its particular function. In other words, religion's teachings about the universe and the human are so selective to make performing its particular function possible. In this way, religion does not claim the function of human intellect in discovering facts in the universe, rather, it devotes its ability to play its role in what the human intellect cannot take part, namely guiding the human toward God.

These two aspects in relation to religion show how religious science becomes possible according to the establishment approach. In order to provide a religious science, we cannot hope to infer its details or even its general principles from the religious texts on the ground that religion does not take the position of human intellect in discovering facts.

However, on the other hand, one cannot claim a priori that the particular teachings of religion about the universe and the human have not the potentiality for providing a background for developing sciences. But, as mentioned previously, one thing should be clear for us in advance: If a religion cannot provide the suitable background for developing sciences, this by no means shows that the religion as religion, namely in performing its particular function, is useless.

Anyhow, in order to establish a religious science, we need to take these steps:

1) To regard the particular teachings of religion about the universe and the human as underlying assumptions of a scientific theory;

2) to suggest scientific hypotheses about the phenomenon concerned under the inspiration of religious teachings;

3) to examine these hypotheses experimentally and provide findings and evidence;

4) to organize and systematize the findings in a way that they take a theoretical structure;

5) to use the theoretical structure to explain and predict new phenomena in a prospective way.

Such a theory includes a science that could be called a religious science. It is called a science on the ground that it is supported by observational or experimental evidence. On the other hand, it is called religious because it is a science with influences taken from a religion; influences derived from the religious teachings regarded as assumptions of the science.

The point explained in the previous chapter is worth noting here again that observational evidence supporting the scientific theory does not remove the color of this influence. Contrary to Reichenbach (1938), the influence of assumptions could not restricted to 'the context of discovery'; rather, exactly because of their being present in the context of discovery, they continue to be present in 'the context of justification'. Experience, as the judge, puts evidence as well as counter-evidence in front of a scientific theory, but by no means demarcate and reject the influences derived from the assumptions.

4.3.3. Islamic Thought as a Metaphysical Presupposition for Human Science

What was expalined above could be considered as a more or less formal account of the possibility and the process of providing a religious social science. What is needed now is to introduce something in terms of content. To consider Islam as an exemplar of a religion, the question to be answered is this: What contents of the Islamic thought could be

considered as a metaphyscial presupposition for the development of social sciences?

To give an answer to this question, we will deal with two points in what follow; firstly the Islamic view on the human as an agent or actor and secondly, the types of explanation used in the Quran about the human action.

a. <u>The human as the Agent</u>

The human's being or personality, referred to in the Quran as the 'soul', is a field in which different elements and factors are invloved from inside or outside. These elements or factors are briefly as follow:

1. Divine nature; an innate acquaintance with God alongwith an innate inclination toward Him. This is called 'fitrah' in the Quran (Rum: 30). Whenever 'fitrah' becomes active in the human, his or her soul experiences a deep tranquillity and in this state the soul is called 'mutmainnah' (at rest) (Al-Fajr: 27)

2. Sensuality; an strong inclination toward what supply the initial or instinctual needs. This inclination could be so strong that it breaches the moral boundaries. The soul is called in this state 'ammarah' (commanding the evil) (Yusuf: 53)

3. Wisdom; an element for recognizing right/wrong and good/bad and seeking a way toward rightness and goodness. This is the reason or wisdom which is called 'aql' in the Quran and it is acually used as verb, though there are nouns as synonym for it like 'hijr'(Al-Fajr: 5)

4. Conscience; an element for criticizing and blaming oneself in case of breaching moral boundaries. The sould is called here 'lawwamah' (self-accusing) (Qiyamah: 2)

5. The will; an element for accomplishment. This is the will which is called in the Quran 'eraadah' and is used as verb (Al-Ahzab: 13).

6. Social factors; influential social factors (family, culture, politic, economy etc.) that provide the background for the development of social aspect of the human identity. These relationships between the individual and social factors are discussed in different places in the Quran. The term of 'community's book' (ketaabul ummah) is used to refer to these kinds of relationships that shape the social aspect of human identity (Jassiyah: 28).

7. Limitations. Finally, there are limits or weaknesses involved in the humans. These might be potential or factual, as they might be due to hereditary situations or social conditions. These kinds of limitations are referred to in different places in the Quran (e.g. Nissa: 28).

As the above-mentioned points show, the field of human soul is full of different contrastive elements or factors. Now, the question is that what could be the product of these quarrels, as far as the human nature is concerned? In other words, what is the final picture of the human beyond these interactions?

It seems that the Quran's answer is this: as far as the different periods or situations of the human life are concerned, the products of these interactions and quarrels could appear as different kinds of victories in favour of different factors or forces within or without the human. However, in the long run or in a comprehensive look, it is not the case that the human is subject to forces that push him toward different direction at different times. Rather, the point is that, in the final analysis, the prodct of these interactions is the human 'action'; the action that could be arributed to him or her and, at the same time, constitues his or her real identity. In other words, these complicated interactions do not prevent the human from being an agent and an origin for his or her actions.

Thus, we read in the Quran: "And that man shall have nothing but what he strives for; And that his striving shall soon be seen. Then, shall be rewarded for it with the fullest reward." (Al-Najm: 39-41) This is not, of course, to say that all the humans are responsible for their actions in the same way; rather, given that different people have different capacities and limitations, each person will be responsible for his or her actions, parallel to the relevant capacities and limitations: "…Allah does not tay on anyone a burden except to the extent to which He has granted it." (Talaq: 7) Nevertheless, the final thing that should not be forgot is that all the humans are origins of their actions and that they are responsible for actions.

We can conclude that the Quran sees the human as an agent who could be regarded as the main origin of his or her actions; the actions that constitute his or her identity. To see the human as an agent and actor provides a comprehensive view on the human that goes beyond the small classifications of people in terms of their gender or race and even in terms of their beliefs, like believers and non-believers in God. In other words, the highest horizon that the Quran invites us to look at the human from it is that the human is an agent and actor. Men or women, white or black, believers or non-believers in God, all are the agents that are in the process of shaping their identities by their actions. Even though their actions are of different kinds, but nevertheless they are all the origin of their actions.

Thus, in a general address to the humans, it is stated: "Your striving is most surely (directed to) various (ends). Then as for him who gives away and guards (against evil), And accepts the best, We will facilitate for him the easy end. And as for him who is niggardly and considers himself free from need (of Allah), And rejects the best, We will facilitate for him the difficult end." (Lail: 4-10) As it is clear, in the first verse, all

the humans are considered as agents who are looking for some ends, even though their strivings are not in the same directions. Thus, in the highest level, the human is regarded as the actor.

In a lower level, given the different kinds of actions, a grand dual classification is accomplished: the action that leads to relief and the action leading to difficulty. In consequence, two kinds of human and two constellations of human souls wil appear. In the first case, the human's striving leads to a consellation in his or her soul in which evil inclinations are dominant, will is the servant, and wisdom and divine nature are the captives. In the second case, the constellation of the soul is like this: Wisdom is the leader, which is, at the same time, harmonious with the divine nature, will is the agent of wisdom, and the captives are the soul's own evil inclinations and those of others which might be accepted by the soul.

What is maily concerned in this book is the most general view on the humans, namely seeing them as actors. This is because in providing a metaphysical presupposition for human sciecnecs, what we need is such a general view to be able to explain behaviors of people in general. Thus, in the next section, in order to provide a detailed account of human action, we will deal with the foundations of action.

b. <u>Foundations of Human Action</u>

The question concerns us here is: What is an action? Action is different from behavior in that action requires that there be some foundations for the outer behavior. Thus, all actions are behaviors but not vice versa. In other words, all actions have behavioral manifestations, but it is not the case that all behavioral manifestations could be considered as actions. Now, the real question is this: What foundations are needed to make a behavior an action?

In looking for the foundations of action as they are seen in the Quran, we find at least three kinds of foundations: Cognition, inclination, and will. These three points will be explained briefly in what follows.

Cognition

In some cases in the Quran, the human action is introduced in a way that we could infer its relying on some cognitive foundations. These foundations themselves are of different kinds or different strengths. At least, three kinds could be recognized in the Quran: imagination, guess, and certainty.

As for imagination, some behaviors of people have been accounted for in the Quran in terms of their underlying imaginations. This is an example: "And (as for) those who disbelieve, their deeds are like the mirage in a desert, which the thirsty man deems to be water; until when he comes to it he finds it to be naught…" (Al-Noor: 39) In this verse, the behavior is called deed or action because of its underlying imagination. As the interesting analogy of a thirsty person in a desert shows, he strives toward a place in the desert because of he imagines the mirage as water.

A similar case is this: "Who amasses wealth and considers it a provision (against mishap); He thinks that his wealth will make him immortal." (Al-Humazah: 2-3) The word 'thinks' is a translation of 'yahssabo' which might be more accurately translated into 'imagins'. Now, the behavior of gathering money and counting it is regarded as an action because of its underlying imagination that it could make the person immortal. The importance of this underlying imagination is in that that the behavior could neither be understood without it, nor could it be regarded as an action.

In other cases, 'guess' (dann) is referred to as an underlying factor of behaviors which make them actions. Compared to 'imagination',

'guess' is stronger, but it is also a cognitive foundation for action. Consider this example: "And as to him who is given his book behind his back…Surely he was (erstwhile) joyful among his followers. Surely, he thought that he would never return." (Inshiqaq: 10-14) Again, the word 'danna' is translated here into 'thought', but the more accurate translation is 'guessed'. The joyful behavior of the person could not be regarded as an action without referring to its underlying 'guess'.

Finally, the third case of cognitive underlyings is certainty. The difference between certainty, on one hand, and imagination or guess, on the other, is that the former is quite firm and established. In the following example, patience and perseverance is at issue which is regarded in relation to its underlying foundation of certainty: "Therefore be patient; surely the promise of Allah is true, and let not those who have no certainty hold you in light estimation." (Rum: 60)

Therefore, some behaviors are explained in the Quran in terms of their underlying cognitive foundations. Cognition, in its different kinds or degrees, constitutes one of the foundations of human action.

Inclination

In other cases, people's behaviors are referred to in the Quran in terms of their underlying inclinations or desires. With regard to this foundation, a behavior is an action on the ground that its meaning is related to its underlying inclinations.

These inclinations could appear in positive or negative shapes, namely as attraction or escape. "And do not abuse those whom they call upon besides Allah, lest exceeding the limits they should abuse Allah out of ignorance. Thus have We made fair seeming to every people their deeds… "(An'am: 108)

The point that every people find their deeds fair seeming indicates that one of the foundations of people's actions could be sought in their inclinations or in their being impressed by the attractiveness of what they do. This impression could be mild or quite stormy. This is an example of the former: "What! he who is obedient during hours of the night, prostrating himself and standing, takes care of the hereafter and hopes for the mercy of his Lord!..." (Zumar: 9) Here, the worship behavior of the person is explained in terms of its underlying inclination of 'hope' for the mercy of God.

The following example referring to the story of the prophet Joseph, indicates an action with an underlying stormy inclination. : "And she in whose house he (Joseph) was sought to make himself yield (to her), and she made fast the doors and said: Come forward…And women in the city said: The chief's wife seeks her slave (Joseph) to yield himself (to her), surely he has affected her deeply with (his) love…" (Yusuf: 23; 30)

Other than inclination in its positive shape, escape or negative shape of inclination is also introduced as the underlying foundation of action. This shape of inclination too could be mild or stromy. The following two examples refer to them respectively. The first example is about Moses' flight from the people of Pharaoh: "So I fled from you when I feared you, then my Lord granted me wisdom and made me of the apostles." (Shuara: 21) In this case, fear as a negative inclination, underlies flight and makes it an action, as well as gives it meaning. The second example, referring to strong negative inclinations, is this: "O you who believe! Do not take for intimate friends from among others than your own people; they do not fall short of inflicting loss upon you; they love what distresses you; vehment hatred has already appeared from out of their mouths, and what their breasts conceal is greater still; indeed,

We have made the communications clear to you, if you will understand." (A'lay Imran: 118)

Thus, the second foundation of action is inclination in its two positive and negative shapes.

Will

Finally, the third underlying foundation of human action is will. In some places of the Quran, people's behaviors are regarded in relation to underlying wills. "And when a party of them said: O people of Yasrib! There is no place to stand for you (here), therefore go back; and a party of them asked permission of the prophet, saying: Surely our houses are exposed; and they were not exposed; they only wanted to fly away." (Ahzab: 13) "

It is worth mentioning that the Quran does not equates will and desire. The difference is that while in the latter, just inclination is concerned, in the former, selection and choice is taken for granted. Thus, a desire could be the subject of will; that is to say, a person can select his desire to be fulfilled as he can decid to reject it. This point is referred to in this verse: "Have you then considered him who takes his low desires for his god…" (Al-Jassiah: 23) This statement indicates that the person has chosen to follow his low desires, in the same way as a person might choose a god to worship.

We can conclude from what have been said in this section that three kinds of foundation is considered in the Quran for human action: cognition, inclination, and will.

The final point worth noting here concerns the sequence of these three kinds of foundations. There are some hints in the Quran indicating that the sequence is in the same way as they explained above; namely cognition is in the first step and inclination in the second and will in the

third. This verse shows such a hint: "And that the hearts of those who do not believe in the hereafter may incline to it (Satan's suggestion) and that they may be well pleased with it and that they may earn what they are going to earn (of evil)." (Al-Anaam: 113)

Three steps might be recognized in this verse: inclination toward Satan's suggestion; becoming pleased with it; and earning evil according to it. The second and the third steps refer more or less explicitly to what we called 'inclination' and 'will' as the second and the third foundation of action. However, the first step in the verse is also apparently continuous with the second step because of the explicit usage of word 'inclination'. The original word used in the verse is 'letussqa' which literally means 'may listen' (to Satan). Thus, we might say that the first step implicitly refers to cognition.

This interpretation is actually a tentative suggestion and it is not meant by that that such a sequence is intended explicily in the Quran. Perhaps, the question of sequence of the foundations of action is an experimental question which needs to be dealt with in the studies of human sciences, rather than being a necessary element of metaphysical presuppositions for these sciences. There might be complicated relationships between cognition, inclination, and will. However, seeking metaphysical presuppositions, what concerns us here is just what are the main characteristics of human action.

Having considered the foundations of human action according to the Quran, we are going to deal with the subject of the types of explanation suited to these characteristics.

c. Types of Explanation of Human Action

Given the above-mentioned picture of the human as an actor, the next point concerns us here is the styles of explanation used in the Quran in relaion to the human action.

It is worth mentioning in the beginning of this section that seeing the human as actor preempts some kinds of explanation that are not congruent with it. To put in Lakatos's terms, negative heuristics of this view, prevents us from appealing to certain explanation types. Generally speaking, what this negative heruristic excludes is mechanistic type of explanation. In other words, we should not consider the human action as an effect that has provided by some causes in a mechanical manner. Some examples of this kind of explanation are external deterministic explanation by means of economic conditions and internal deterministic explanation by means of instincts.

What will be the 'positive heuristics' of the view in relation to the style of explaining human action? Again, generally speaking, teleological explanation could be considered as the main type of desired account of the human action. In teleological manner of explanation, as it is regarded here, behaviors of the person are explained in terms of reasons or intentions in the first stance. It seems that this main type of explanation is used by the Quran wherever an account is neede for explaning human action.

However, this does not mean that other kinds of explanation are not used in the Quran, but the point is that, in the final analysis, they are used in the domain of a teleological explanation. In what follows, some of these kinds of explanations will be mentioned under the title of these principles: rationality, decision-making, dispute, self-deception, distress, and systematic alteration.

1. Principle of Rationality

According to this principle, it is assumed that the person has reasons for his or her actions and, in fact, performs them on the ground that considers them as rational or reasonable. This is not, of course, to say that reasons of the person are necessarily logical or rational in themselves, rather it is meant that he or she regards them as rational and defensible.

This principle has the most important place in the Quran in comparison with other principles discussed here. This is because it is used widely in explaining human actions regardless of classifications of people. Thus, the actions of both the believers and non-blievers in God are explained by means of this principle. In relation to the believers' actions, we read: "And when they hear what has been revealed to the apostle, you will see their eyes overflowing with tears on account of the truth that they recognize; they say: Our Lord! We believe, so write us with the witnesses (of the truth)." (Al-Maidah: 83) In this verse, some behaviors of the believers are explained by means of their recognition.

On the other hand, as for the actions of the non-believers, we read: "Or, have they taken gods besides Him? Say: Bring your proof; this is the reminder of those with me and the reminder of those before me. Nay! Most of them do not know the truth, so they turn aside." (Al-Anbia: 24) In this case too, the non-blievers' escape of the truth is explained by means of their ignorance of the truth.

Given the wide scope of this principle, it should be considered as the main principle in the teleological style of the Quran in explanation.

<u>2. Principle of Decision-making</u>

This principle indicates that the person's action is performed on the ground that he or she has decided to do that. To explain an action in terms of will and decision is also a kind of teleological explanation

because will and intention always relates to something and that will be as an end toward which the action is performed.

The two principles of rationality and deceision-making have not in fact a clear cut distinct, rather they are often accompanying each other. In other words, the person who takes an action to be rational, often undertakes it, if it is required; on the other hand, a person who decides to perform an action, he or she often regards it as rational. Thus, it could be said that distinguishing these two principles is due to emphasis.

That is why the principle of decision-making too, like rationality principle, has a wide scope in explaining the human behavior. This principle is also used in the Quran in relation to both the believers' and non-believers' actions. This is an example: "Whoever wants this present life, We hasten to him therein what We please for whomsoever We want, then We assign to him the hell; he shall enter it despised, driven away. And whoever wants the hereafter and stives for it as he ought to strive and he is a believer; (as for) these, their striving shall surely be accepted." (Al-Isra: 18-19)

As it is clear, in the both cases, their actions are explained by means of their wants and preferences. Nevertheless, some of these actions might have painful consequences; this is in fact the price that a person should pay for his wrong choices.

3. Principle of Dispute

This principle refers to what is different from the indications of rationality principle. In this case, the person undertakes an action that is not based on a rational justification, that is, even the person himself or herself does not regard it as rational. Nevertheless, we should not forget that this principle is at the domain of teleological explanation and, thus,

presupposes a justificaion and decision, even though the justification and decision are not accurate.

An example could shed some light on this principle: "Surely (as for) those who dispute about the communications of Allah without any authority that has come to them, there is naught in their breasts but (a desire) to become great which they shall never attain to; therefore seek refuge in Allah, surely He is the Hearing, the Seeing." (Al-Moamin: 56) When it is said that the person disputes without having any authority of proof, this indicates that the person himself does not regard his claim reasonable either. Quite contrarily, he might have even recognized the truth of what he is disputing. Nevertheless, he is interested in his greatness, even though he is checkmated before the truth: "They disputed with you about the truth after it had become clear, (and they went forth) as if they were being driven to death while they saw (it)." (Anfal: 6)

Therefore, according to the principle of dispute, the human action is not always due to logical or rational reasons; nevertheless, they are always due to reasons, though the shaky ones that the person passively tries to stand them up.

4. Principle of Self-deception

This principle is also different from rationality principle. According to this principle, the person undertakes an action that he is, at a certain level, aware of its being vain, but, at another level, feigning negligence of being aware, he undertakes it. Thus, a kind of self-deception is involved in the course of the action. As it is clear, in self-deception, it is the person that deceives himself and this requires that he know, though briefly, that his action is futile. Given all this, the person could perform his action only when he feigns negligence of his awarness.

The Quran has used the conept of 'tassweal' in relation to the soul which means self-deception. In 'tassweal' the person decorates somethings or some deeds so that the effect of his brief awareness to the contrary could be dissolved and thereby paves the ground for performing the desired action. Referring to this point in the story of Yusuf, the Quran states: "He (Yaqoub) said: Nay, your souls have made a matter light for you, so patience is good; maybe Allah will bring them all together to me; surely He is the Knowing, the Wise." (Yusuf: 83) In other cases, the conscious background of self-deception is mentioned explicitly: "And do not mix up the truth with the falsehood, nor hide the truth while you know (it)" (Al-Baqarah: 42)

Given the above-mentioned meaning of self-deception, it is clear that this principle could also be considered in the domain of teleological explanation. Not only is it the case that self-deception has a conscious background, but also it worths noting that self-deceptin is aimed toward the attainment of some desires.

5. Principle of Distress

According to this principle, the human action is due to a state of helplessness and distress. It seems that this principle has the most similarity to mechanistic explanations and the most distance from conscious teleological explanations. However, as it will be explained below, this principle, in its particular meaning intended here, could also be considered in the domain of teleology.

In some cases, the Quran gives an account of the human action in which the person seems helpless so that he cannot stop the process of the action. Take this example: "Those who swallow down usury cannot arise except as one whom Shaitan has prostrated by (his) touch does rise. That

is because they say, trading is only like usury; and Allah has allowed trading and forbidden usury…" (Al-Baqarah: 275)

The analogy used in this verse for the action of usurer, namely the touch of Satan and providing disturbance in his perception, is an example for the imposition from the outside and, in other words, a suitable analogy for mechanistic explanation. However, this analogy is used merely to show the distressful situation of the person, rather than emphasizing the direction of influence from the outside in a mechanistic manner.

To put the principle of distress in the domain of teleology, we could say that the present helplessness of the person is the product of a process in which the person has been consciously and intentinally performing his actions. In other words, the helplessness has not been involved from the beginning, though due to persistence in acting as such, a kind of establishment is provided for the action and its foundations, so that, even if the consequence is unpleasent, it could not be easily stopped. In fact, the newly arrived consciousness and will for avoiding the unpleasant consequence could not resist against the established consciousness and will related to the action.

Therefoe, the person sees himself helpless in doing the action again and again even though this helplessness is the attained in the background of consciousness and decision-making. Referring to this point, the Quran states: "Yea! Whoever earns evil and his sins beset him on every side, these are the inmates of the fire; in it they shall abide." (Al-Baqarah: 81) In this verse, it is stated clearly that the person 'earns' (consciously and intentionally) his actions in the first stance, but consequently his sins overwhelm him.

6. Principle of Systematic Alteration

This is the last principle explained here. According to this principle, the person's behavior is due to his closed mental system that does not exchange with the outer world. When the person becomes so firm on his beliefs that does not consider the outer counterevidence, then he is in the beginning of a road to strongly and systematically alter the counterevidence, no matter how strong are they. In any case, they are interpreted merely in terms of the person's beliefs or inner rules, that is to say, being altered.

In some verses of the Quran, explanations of this sort could be recognized. The following is an example: "Surely We have placed chains on their necks, and these reach up to their chins, so they have their heads raised aloft. And We have made before them a barrier and a barrier behind them, then We have covered them over so that they do not see. And it is alike to them whether you warn them or warn them not; they do not believe." (Ya Seen: 8-11)

It is worth mentioning that attribution of placing the chains to God does not mean that God has decided to do this without criterion; rather this is the natural result of their deeds that is stated in terms of God's Will.

Anyway, the verse indicates that the people are living in a closed system so that they could not see the external evidence at all. Thus, they are indifferent to the warnings of the prophet. In such a state, the strength of the evidence is not relevant so that even if they can see by their eyes what they are denying, then they are ready to consider the new perception as fallacious rather than their previous beliefs. This is stated clearly in this verse: "And even if We open to them a gateway of heaven, so that they ascend into it all the while, they would certainly say: Only

our eyes have been covered over, rather we are an enchanted people." (Hijr: 14-15)

It seems plausible to consider this principle in the domain of teleological explanation. In fact, the person who lives in such a closed system has his own ends; rather he has chosen them forever. It is correct that he thereby ruins his life altogether, nevertheless he considers his untenable ends serious. Referring to this point, the Quran states: "Say: Shall We inform you of the greatest losers in (their) deeds? (These are) they whose labor is lost in this world's life and they think that they are well versed in skill of the work of hands." (Al-Kahf: 103-104)

Concluding Remarks

The two last sections has shown that there are 'metaphysical' points on the human being in the Islamic thought that could be used as a foundation for providing human sciences.

In order to use these points, they should be considered as a metaphysical foundation for developing a scientific theory. In other words, given the Islamic picture of the human being, we should deal with these questions:

1.what subjects or problems could be formulated for study in human sciences?

2.What kind of explanation could be used in answering why questions about the human behavior?

3.What kinds of concepts and models, suitable to the Islamic thought, could be used in thinking about the problems?

4.What hypotheses could be formulated about the issues or problems being studied?

5. Which methodological characteristics are required from the Islamic picture of human being?

Having provided answers to these kinds of questions, we need to advance a scientific study about the human behaviors and problems. In order to be scientific, this study should seriously deal with observation and experimentation. In fact, the role of the Islamic thought is mainly shown in providing a theoretical background, even though some methodological qualifications could also be performed. Given the theoretical background taken from the Islamic thought, the resultant data and findings could be labeled Islamic human science on the ground that its development in its different phases has been under the influence of Islamic metaphysical presuppositions.

In this book, only two steps of what should be done have been taken: to give the Islamic conception about the human being; and to formulate the style and principles of explanation about the human behavior. The former is the most important step because it is what leads us in the subsequent steps, as it is shown above in dealing with the latter.

What is crucial in taking these steps is to consider oneself in the space of human sciences. In other words, we need to formulate the Islamic concepts in a way that they could work in the realm of human 'sciences'. Surely, this particular orientation has not been the main concern in the Islamic scriptures. Islam as a religion tries to guide the human toward God and all the teachings of Islam are organized around this purpose. However, we might look at them from another angle and to see which of them and how could be used in relation to the purposes of providing human sciences.

In addition to the two steps taken in this book, the other steps need also to be dealt with, but this is a big job that might require writing a number of essays or books.

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