CHAPTER V

TOWARDS THE HERMENEUTIC OF SCIENCES OF NATURE

In the previous chapters we attempted to explain the possibility of developing a hermeneutical perspective in the philosophy of science in general and in debate between Kuhn and Popper in particular. We have earlier seen that hermeneutics arose as a theory and as a method of interpretation of a text. Subsequently, it broadened as a theory of understanding meaning. However, at the hands of Dilthey, theory of hermeneutics takes a new turn. With the result, the hermeneutical perspective was felt to be relevant and appropriate for human sciences and not for the natural sciences. Hence, the main purpose of this chapter is to try to free the hermeneutic framework from the boundaries of human sciences and try to explore its scope into the sciences of nature. Since Kuhn and also Popper, mainly deal with philosophy of natural sciences, our chief task is to look at the sciences of nature from hermeneutical point of view. In order to fulfil this rather difficult task, we should first consider
Dilthey's contribution to the tradition of hermeneutics and then look for a possible way to overcome the sharp contrast between explanation and understanding, as proposed by Dilthey himself.

Dilthey was deeply influenced by Kant and Hegel. Under Hegel's influence, he introduces a historically oriented approach for the understanding of human life. This he coins as 'critique of historical reason'. According to him, it represents as a counter part to that of critique of pure reason. Let us see how?

Dilthey accepts a basic motivation from Kant's critical philosophy. From Dilthey's point of view, Kant's contribution consists of a systematic account of which explanation is not merely a methodology of cognition but also a condition of possibility of objective knowledge. Dilthey appreciates Kant as providing philosophical foundations for knowledge. But, he differs from Kant, particularly about the transcendental programme for giving such a foundation. For the present purpose, it is important to note Dilthey's appreciation to the need for philosophical foundation for empirical knowledge, i.e., how to understand pure reason. At the same
time, he also feels that Kant's achievement needs a further extension and elaboration.

First of all, for Dilthey, Kant has only provided a foundation for our knowledge of the objects of natural world. Critique of pure reason is really a critique of our knowledge of nature - natural objects, the natural laws etc. Dilthey suggests that one can understand it clearly if one sees how Kant's philosophy is tied up with Newtonian philosophy of nature. Hence, it is necessary to go beyond Kant. The first direction for it is to search for philosophical groundings for human sciences like sciences of nature. If, this is carried out, then we would have a critique of historical reason. But for Dilthey, critique of historical reason is not merely an extension of critique of pure or natural reason. In Dilthey's terms, if, a basic category of Kant's critique is the notion of object, then the basic category of human sciences would be the category of 'expression' or 'meaning'. All Kantian categories follow from the notion of object in general and this is how Kant himself understands the transcendental deduction of categories, i.e., the concept of object in general, is possible if we apply the twelve categories of understanding to the manifold of science. According
to Kant, categories are implicates of the notion of object in general. However, the basic notion in human sciences is not the notion of object but of action.

One should note that the concept of action is not an ultimate category for Dilthey. Action itself can be explained in terms of its meaning. It is expressive of intentions, motives and therefore, the 'expression' is the ultimate category. Dilthey further claims that the implicates of the category of 'expression' are fundamentally different from objects in general. This means that the categories in the framework of objects of human sciences are conceptually different from natural sciences. Dilthey's distinction between explanation and understanding is really a consequence of this, because as far as objects are concerned, one can account for their temporality and change only in terms of laws which could be understood by explanation alone. Here, Dilthey accepts the connotation of explanation given by Mill and contemporary positivists; i.e., to explain is to show that a particular event is subsumable in some other law. But, as far as human actions are concerned, they are purposive and hence, are understandable in terms of grasping meaning rather
than explaining in causal sense. That is why Dilthey makes a distinction between explanation and understanding. Dilthey emphasizes that even understanding gives us objective knowledge. The social sciences are objective or scientific in their own way.

Dilthey differs from Kant as according to him, Kant does not give justice to the historicity or historical aspect of Newtonian philosophy of science or to philosophy of science, in general. For Dilthey, there must be a distinction between temporality and change on the one hand and historicity on the other. Hence, accounting for temporality and change does not make a natural scientist to be historical. In Dilthey's sense, two conditions are required to account for the historicity.

According to the first requirement of historicity, human actions should be seen in the light of earlier events i.e., human behaviour is not merely causally influence by past but takes account of past as a tradition or as an accepted social convention. One may, therefore, say, that what Dilthey expresses is a distinction between human behaviour in accordance with and in the light of
past. According to him human action is not just
temporal, past oriented, but is always in the light
of it.

From this first requirement, the second also
follows i.e., if my behaviour is oriented to past
then laws governing the present would not be the same
that govern the past. Since, past has become an
internal feature of human action, the exact repetition
of the past may not be possible. Historicity of
human action, thus, paradoxically, leads to novelty.
In this sense, no genuine novelty is possible in
science of nature. Here, Dilthey is not denying
that there are no laws in human sciences. But these
laws are different in character as they produce
novelty where there is a scope for creativity as
well as freedom. Hence, these are laws of freedom.
This point, however, leads to a further point of
difference between Dilthey and Kant.

Kant also distinguishes between causality of
nature and freedom. In Kant, freedom is explained
by the fact that moral action is determined by the
practical reason. i.e., according to Kant, moral
action represents free causality of will. But Kant
holds the view that practical reason does not give
us knowledge in the strict sense and hence, the moral action which is determined by free moral will, cannot be a subject of science. While for Dilthey, one can have the knowledge of human actions as well.

Both of them agree on the point that human sciences cannot be totally ethically neutral. A moral point of view is an intrinsic part of the subject matter of human sciences. They differ on the point of a scientific cognition of human action. Dilthey argues for the human sciences as a genuine form of human knowledge. To the account of this knowledge, Dilthey calls, 'Critique of historical reason.'

Besides Kant, Dilthey was profoundly influenced by Mill in particular and empiricism in general.\(^3\) His affinity with empiricism can be seen on two heads. Like Mill and empiricists, Dilthey rejects any a priori foundation for human sciences. More specifically, like Mill, Dilthey also, at least in early part of his work, accepts that there are psychological foundations for sciences of man. But, inspite of these agreements, there are certain differences between Dilthey and empiricism. As far as the older Millian empiricism is concerned, the
differences are more of substantial nature rather than conceptual. Unlike Mill, Dilthey believes that adequate psychological, presuppositional laws are not explanatory, but are purely descriptive psychological laws. However, Dilthey was not able to give a concrete content to the descriptive psychology, but a distinction between normative psychology and descriptive presuppositional psychology was seen by him.

Secondly, Mill and Dilthey differ in their respective social philosophy. Mill was out and out an individualistic. Whereas, Dilthey, in the tradition of German romanticism and Hegel in particular, saw the individual as necessarily bound up with groups and communities. Dilthey is more collectivistic than individualistic. Hence, the differences between Dilthey and contemporary empiricism are conceptual and methodological and not substantial. Moreover, unlike positivists of Vienna circle, Dilthey does not accept the unity of sciences. Again, like the empiricists he would not connect the scientifi city of knowledge so clearly with the covering law model. There could be a science without explanation.

Thirdly, he differs from logical empiricists and does not accept the Weberian value neutrality of science.
Fourthly, for Dilthey, human sciences do not have certain general metaphysical force. Dilthey does not treat the presuppositions of metaphysics in the traditional sense but for him the very possibility of human sciences depends upon what he calls 'philosophy of life'.

In his philosophy of life, Dilthey gives much emphasis on categories of human life. The category central to the human life is the category of expression. The notion of expression in Dilthey is similar to the notion of meaning. However, in certain ways it is also different from meaning. Meaning, as understood by Dilthey, primarily refers to the sense of linguistic expression. In that sense its narrow connotative meaning has a semantic category. But Dilthey argues that the semantic category itself presupposes a more primordial understanding of meaning. Because like romantic philosophers, Dilthey looks upon language as a tool for communication and also as a medium of expression. Individuals and collectivity, express their own inner form among other things. Therefore, for Dilthey, it is an expression and not the meaning which can serve as an ultimate category.
By this category of expression, human beings can recall the past. According to the past experiences of an individual or of the collectivity, one can have a meaningful experience of the expressions of others. The meaningfulness is equated with the historicity or reflection of past. The category of meaningful expressions highlights some important aspects of the point of historicity. They are as follows:

1) Historicity should not be identified with temporality or change. It is involved not only when there is change but even when social order is stable. Stable social order is possible because values of past are preserved in passion of time. This preservation takes the form of institutionalization and internalization. Hence, social stability is the result of historicity.

2) Historicity should never be identified with repetition. New meanings and values are also the result of historicity of human actions. The production of novelty is the result of historicity.

3) From methodological point of view, historicity leads to contextuality. Any event is
significant only when seen as a part of a larger context. Hence, this methodological contention suggests the contextuality of a hermeneutical understanding. Dilthey also refers to hermeneutical circle where the part implies the whole and also the whole implies the parts. This connection between the historicity of human action and understanding is the distinguishing mark of hermeneutical position.

Apart from serving as a fundamental notion of human sciences, historicity may also have some indirect implications for philosophy of natural sciences, a theory that Dilthey does not explore in details. Dilthey confines himself to be a critical observer of Kant's a-historicity, but does not positively develop it. If so, then we would have a beginning of hermeneutics of nature.

Even in natural sciences, nature is conceptualized in a certain way. A picture or an image of nature is a historical formation because different cultures have different images of nature or environment. For Dilthey there is plurality of world views and hence, different conceptions of
nature lead to different types of sciences of nature. Since these images or histories or cultural formations come under natural sciences and interpretations of nature in these sciences, it opens the possibility of hermeneutical interpretation of natural sciences. But, instead of opening out this possibility, Dilthey works out a programme of human sciences.

If we take up the hermeneutics of natural sciences, then Dilthey's contrast between sciences of nature and human sciences may soften. We can show the unity of sciences to be different from positivistic conception of unity of sciences. For this, we may have to reconsider the dichotomy between explanation and understanding. But before that the chief achievements of Dilthey, in the context of philosophy of human sciences may be identified as following:

(1) He clearly brings out the conceptual and methodological implications of notion of history as a basic constituent of the subject matter of human sciences.

(2) He also recognises that method of social or human sciences must be in some sense both contextual or hermeneutical.
(3) In so far as the subject matter of the human sciences is not merely brute facts but meaningful phenomena, interpretation or understanding or verstehen is an essential tool for social understanding.

(4) The concepts and methods of a discipline are regulated by specific nature of that discipline.

In this respect, a basic contrast between Dilthey's hermeneutics and positivists approach is seen clearly. For positivists, the methods determine the aims and objectives of any scientific discipline. While for Dilthey, the subject matter determines the framework of a discipline. Hence, positivists in terms of their orientation, speak of the unity of methods. On the contrary, Dilthey recognises a diversity between sciences of nature and culture on account of their respective subject matter. One may recognise these achievements as valuable and significant. Yet, it should be noted that Dilthey expresses these insights in a restricted and dogmatic way. This may create some conceptual and theoretical difficulties, which may inhibit the potentialities of the ideas themselves. Hence, we
should note the basic limitations of Dilthey's formulation of hermeneutical position of human sciences.

The first difficulty arises with the basic category of expression as worked out by Dilthey. Dilthey recognises that category of expression and the linguistic meaning are not identical, yet they are closely connected. Dilthey, therefore, basically wants to extend the concept of meaning from linguistics to human action. This would require that one should explore a conceptual analogy between linguistic utterances and meaningful actions. A subsidiary issue is implied in this problem. One must develop a theory of language to recognize performity of the linguistic utterances.  

Secondly, one must explore a sense in which action can be modelled on linguistic utterances. This linguistic homology between meaning and action are persuaded by Ricoeur, which is essential for hermeneutics of social sciences. However, Dilthey lacks the conceptual connection between linguistic utterances and significant action.

Thirdly, if one has to avoid the relativism of world-views and has to explain the human sciences,
then one should bridge the gap between explanation and understanding. This, however, requires the following subsidiary steps:

First of all, the concept of understanding or verstehen must be freed of its psychological limitations. When Dilthey speaks of understanding, he seems to have a model of empathy, i.e., the recent discussions have shown that the understanding of verstehen is itself conditioned by understanding of meanings, which should not be explained in psychological terms. In other words, because I share certain common meanings with others, the actions of others may be psychologically internalized with one's own. If this is so, then understanding is primarily, understanding meanings and then understanding empathy becomes secondary. 7

Therefore, one has to broaden, the concept of verstehen to stand for commonly sharable meanings. Secondly, if one has to preserve the scientificity of human sciences, one should be able to show that in the human science there is a place for explanation in its own ways. Here, in Dilthey, the reciprocity
between explanation and understanding is absent, which is clearly seen in Ricoeur’s framework. This lack of reciprocity results into two severe consequences.

(1) Dilthey insists upon the scientificity of human sciences. But, he is unable to account for how they are possible as science. As a result, his hermeneutics, of scientific point of view relapses into a kind of anti-scientific romanticism.

(2) Because Dilthey creates a gulf between natural and human sciences, he has to consider the validity of the positivistic position as far as the sciences of nature are concerned. But, ultimately this does not give any characteristic of scientificity to the human sciences, i.e., if the subject matter of human sciences is human action, then such action necessarily involves interaction, not merely with other subjects but with natural objects too. The context of action, therefore, is a context of nature. If, nature is understood purely in the positivistic way, then within that framework, human action does not have any distinctive traits of its own. Given positivistic understanding of natural objects, some consequences arise for human sciences. It results
into behaviourism. Dilthey, in the last resort, is unable to avoid this implication. Therefore, empiricist would like to respond to Dilthey, that hermeneutical point of view may have relevance in the context of discovery as a heuristic device and not in the context of justification. Hermeneutical position, therefore, is an appendix to overall positivistic conception of science. It is clear, therefore, that the hermeneutical framework must go considerably beyond Dilthey. In the immediately following discussion, I have made an attempt to describe advances which Ricoeur's philosophy of human sciences gives us. For our purpose, chief value of Ricoeur lies in the following two insights:

1) Enlargement of the scope of hermeneutics is concerned with meanings, as both, oral and written. In this respect Ricoeur overcomes the psychologism implicit in Dilthey.

2) Ricoeur also suggests certain circularity or reciprocity between explanation and understanding. Hence, one has to concentrate chiefly on these two ideas. However, the ultimate aim of our understanding is to suggest the possibility of hermeneutical
understanding of natural sciences, which is missing in Ricoeur also. But his discussion of action may suggest the possibility of the hermeneutics of nature.

Thus, in the context of our discussion, a consideration of Ricoeur's approach to human sciences becomes relevant from a number of point of views.

Firstly, Ricoeur reconceptualizes the task of hermeneutics and introduces a distinction between two modes of meanings - meaning, at the level of oral speech and at the level of textual discourse. This distinction is important from a general hermeneutic point of view. It restores the proper task of hermeneutic interpretation of meanings. In the hands of Dilthey, interpretation was given a narrow psychological focus, but Ricoeur tries to liberate interpretation from such psychologism.

Secondly, distinction between speech and discourse enables us to understand how meaning may transcend contextuality and situationality and consider the general validity.

This is important from the point of view of human sciences, for it prepares the basis for the
claim of objectivity for interpretations. If, interpretation is wholly contextual, problem of relativism is unavoidable. Ricoeur suggests a context transcending validity and thereby an objective truth, in its own way. Dilthey was unable to work out such an understanding of objectivity and was trapped in relativism.

Second aspect, in which Ricoeur's approach is instructive, is the way he proposes a novel understanding of action in oral and textual discourse. This again is important because hermeneutics whose basic understanding is discourse and their interpretations, is now extended to human action. Hence, one can legitimately speak of hermeneutics of human sciences.

Thirdly, Ricoeur's reformulation enables to break out the dichotomy between explanation and understanding and works out a theory of reciprocity between the two. Ricoeur is able to restore the explanation as a form of human sciences without falling back to the positivist's idea of explanation of general laws. Ricoeur, thus attempts to free the concept of explanation from the covering law model and shows, within the paradigm of hermeneutics a place
for explanation. This is important because it restores the scientificity of human sciences, which Dilthey surrenders. It is, therefore necessary to consider Ricoeur's framework in details. However, our ultimate purpose is to extend it to philosophy of natural sciences. Hence, our discussion can be selective. From such a selective point of view, we can begin with some of Ricoeur's general remarks on discourse.

Ricoeur says that the hermeneutical tradition is confined to linguistics and literary criticism. However, it is more confined to speech as a medium of communication. But for Ricoeur, when language is used as a discourse it is both a speech and written text. There are four important traits of a discourse which were supposed to be the traits of speech. These four traits temporality, subject, world and interlocuter are applicable even to a text. None-the-less, Ricoeur claims that discourse as a written text has a wider possibility of hermeneutical interpretations than the discourse of speech.

With the bonds of temporality the discourse as speech becomes an event. As an event, it is
related to acts and functions in the same manner as described by the speech act theories, where there is a sequence of locutionary, illocutionary and perlocutionary acts. A similar type of sequence is also there in a written discourse. Even a text can have some illocutionary force that leads to a perlocutionary action. An important aspect of a written discourse is that its illocutionary force is not restricted to the immediate present, as in the case of a speaker and hearer, but it can be effective even in the future.

Secondly, in the case of a speech, the presence of a speaker is necessary. But it is quite likely that the intentions of a speaker and what does his speech mean do coincide. In the case of a written text the subject or author is detached from the text. It is, therefore, always presupposed on the side of a reader, that the intentions of the author and what a text says may not always coincide. Hence, it is always possible to understand a text as a whole.

By speech and text the subject wants to convey something; i.e., both speech and text are about something. Both are with some specific reference, so it can be described as the referential world of a
speech or a text. But, there is a subtle difference between these two. A speech is restricted to an ostensive referential world, while the text goes beyond the ostensive referential world and widens its scope with non-ostensive reference. With a new situation, a new ostensive reference may emerge which goes beyond the original one.

The fourth one is the most important trait which actually fulfils the grounds of meaningful communication, i.e., an interlocuter. On a certain occasion, a subject communicates something to someone. Hence, a second person or an addressee is an essential one; without whom the communication cannot be completed. However, a speech limits its addressees, as it is an event, hence, there is a speaker and a hearer, while a text can have a universal range of addressees. Whoever can read a text can become an addressee.

These four traits are thus functional in speech as well as in a written discourse. A text has a wider horizon of possible hermeneutical interpretation as compared to a speech. Hence, Ricoeur says that even a text can be treated as a
paradigm for hermeneutical interpretation. An important consequence of these four traits is that we can extend the horizon of hermeneutical interpretation to human actions as well. Human actions, we have seen, are the direct results of the illocutionary force of both a speech and text. In many situations, as in written discourse, even an action is overcome by interaction, hence even an action can be a fixed text.

We can fix the action temporarily because there are some propositional contents of an action, e.g., the verbs such as, to kill are meaningful only within a particular referential time sequence. These propositional contents provide the noema or meaning of an action; by which action can be fixed like a written discourse. Even an action can have an illocutionary force by which interaction is made possible. This indicates a social dimension of action. Some actions are such that they leave their trace or mark behind, which can be force, even in future, i.e., like an author of a text, even an agent of an action can be detached from his action. His action becomes a documentation of human action that is registered or recorded as history.
This social dimension of action opens one more possible character of action. The importance of an action goes beyond its relevance. An action can, therefore, develop some such meanings which can be actualized in the situations other than the one in which the original action has occurred. This means, that like a text even an action has some non-ostensive references which stresses the relation between cultural phenomena and their social conditions. The action, thus, has an universal range of addresses. Being a cultural mark, it is quite natural that many people follow the same action. It becomes, thus, an open work.

In short, as far as these four traits are concerned, even an action along with a text, exceeds boundaries of them. However, a speech has a limited horizon. Hence, according to Ricouer, these are the four traits, viz., (i) fixation of action, (ii) dissociation from the intentions of an agent, (iii) display of non-ostensive references, (iv) universal range of addresses. 11

These four traits taken together, form the objectivity of human action. This is a very peculiar kind of objectivity which includes both the objective explanation and subjective understanding. Now
there is no need to borrow any model from sciences of nature to have an objective explanation. Instead, our task is now limited to the paradigm of text, even this methodological problem can be solved by the paradigm of the text. In order to understand the meaning disclosed in a text, one needs some explanation of the text. Similarly, in order to explain possible interpretations of a text, one should first understand what is already said. In short, the paradigm of text itself provides a link between explanation and understanding.

However, our earlier discussion of Dilthey had suggested that one of the chief inadequacies of his position was the dichotomy between understanding and explanation. This particular dilemma becomes acute not only for Dilthey specifically, but for the general methodology of social sciences as a whole and for hermeneutic philosophy of human sciences. We must, therefore, describe the problems created by this opposition at each one of these three levels.

At the hands of Dilthey, the opposition between understanding and explanation was overburdened by certain taken for granted and uncritical assumptions which Dilthey made about explanation and understanding.
With regard to explanation, Dilthey did not fundamentally dispute the positivistic idea that to explain means to bring an event under certain general law, i.e., Dilthey did not question the model of explanation as a nomological assumption. This was the picture of explanation Dilthey found in Mill and he more or less accepted as inadequate explanation as such. But today even in the contemporary debate of philosophy of natural sciences the covering law model is subjected to variety of criticisms. What this criticism suggests is even for the purpose of philosophy of natural sciences, deductive nomological model does not have any unique privilege. But apart from this particular difficulty, the Millian model of explanation immediately raises the problem of scientificity of human sciences. Mill himself was in this sense, more consistent than Dilthey. Mill believes in the unity of sciences. Hence, for him this was not a particular problem. But for Dilthey it was a critical issue because he was committed to the following three claims which create a problem for him.

1) Scientific explanation is nomological
2) The cultural sciences do not have laws in the sense of objective natural sciences.
3) Cultural disciplines are also sciences.

If Dilthey carries over certain uncriticized assumptions about explanation, he is equally uncritical about understanding. Understanding in Dilthey finally reduces to a psychological identification with the mental state of others. He describes it as relieving. The difficulties of this psychological model are numerous.

It leads to psychologism, since the methods of human sciences are set to be based on psychological process of empathy. Dilthey was aware of this. But he claimed that psychology as presupposition of cultural sciences is not an explanatory psychology. But this position leads to further difficulties. For, it is not clear what would be the nature and scope of alternative psychology, which Dilthey had in mind. More importantly, what would be the analysis of understanding or verstehen of alternative psychology. Lacking answers to these questions, the notion of understanding leads to a vague and indefinite problem.

Further more, if verstehen is tied to mental processes of others, then the problem would be whether
the study of the past could ever be admissible. Especially, the case of historical understanding of past cannot be based on the psychological understanding of specific individuals. Secondly, the problem of unintended consequences of actions would arise. Popper has remarked that human actions lead to unintended consequences and that social sciences can go beyond common sense experience. This point is two fold.

1) Dilthey's contrast between understanding and explanation is based on an uncriticized philosophical assumption about natural sciences.

2) The polar contrast between understanding and explanation leads to ambiguity and lack of clarity about the nature of human sciences themselves.

It is clear that response to Dilthey cannot be merely eliminating the contrast. Because whatever may be the inadequacies of his metatheory, it is clear that cultural sciences deal with actions which are not merely causal but also significant and meaningful. This distinction between purely objective
sciences and human sciences whose facts are not merely facts but meaningful facts shows that positivistic reduction is not appropriate. Hence, preservation of hermeneutical character of human sciences, at the same time leads to a paradox, i.e., explanation and understanding are not divorced with each other but are related reciprocally. There should be a passage from explanation to understanding and from understanding to explanation. This circuit between explanation and understanding preserves the differences between the two without separating them from each other. As we shall see, Ricoeur, by constituting a model of circuit relation instead of Dilthey's polar antithesis.

A further step would be, if there is a movement of understanding in explanation, this would have an indirect influence upon understanding of explanation in natural sciences. In other words, reciprocity suggests that there is a hermeneutical element in natural sciences themselves. This is a step which Ricoeur does not take, but may be suggested the possibility, by his theory of reciprocity between explanation and understanding.

To give a further substantiation of the claim to relate explanation and understanding, it is
necessary to briefly consider Weber's conception of methodology of social sciences. Weber, influenced by Ricart and other Neo-Kantians, made a distinction between objective causal explanation and subjective understanding. But unlike Dilthey, he does not freeze these polar oppositions. While for Weber an adequate understanding of social phenomena should fulfill two criteria.

1) Adequacy at the level of meaning

2) Adequacy at the level of causation.

The first implies that an action must be seen as meaningful, as the actor himself perceives it. In this way, Weber appropriates the notion of Verstehen. He liberates the notion of understanding from its psychological overtone. For Weber, subjective understanding is not psychological empathy but a rational understanding of meaning of action. Hence, he claims that meaning may be imputed to actions and should not be derived by actor's intentions. Since Weber liberates meaning of action from actors' intentions, he is able to overcome psychologism. Understanding is now a rational and not psychological understanding with others. This aspect of Weber, that actions have meaning independent of intentions of actors - Ricoeur
also emphasizes as important since interpretation of meaning may now be freed from the psychological hypothesis.

In other words, hermeneutics has an autonomy of its own. Apart from this claim, that action is significant, independent of intentions - there are two other advantages:

1) It enables us to understand Popper's criticism of unintended consequences of human action without loosing its hermeneutical character.

2) The autonomous meaning of actions enables human sciences to go beyond the conventional assumptions of actions i.e., because actions have a transcending significance, it is possible to have a deeper understanding of actions going beyond its ordinary understanding.

Weberian position that actions have an autonomous meaning of their own shows how this meaning, which is other than intended meanings, may be interpreted differently, from different points of view. Moreover, it can also explain the plurality, in the sense of different interpretations of human action.
Understanding in Weber’s sense, i.e., understanding meaning of actions from a wider point of view and by a rational method shows how this kind of understanding explains also. One can explain an action if one rationally understands it. Therefore, the dichotomy between explanation and understanding seems to be overcome. But unfortunately, Weber did not clearly realize the implications of his conception of understanding. He perceives the dichotomy but does not realize that his own theory can overcome it. Instead he again fails into oversimplification, i.e., in hermeneutical explanation, a causal explanation is also necessary. This creates the problems which Dilthey faces and Weber, in addition to the problems of his own.

Weber presupposes that objective casual explanation and subjective understanding would never lead to contradictory results. But, if there should be incompatibility between the two, then the questions would be disastrous. Since, Weber does not think of such a dilemma his method cannot help us in such a crisis, if it would occur. Thus, the discussion of Dilthey and Weber clearly suggests the following:
1) We must preserve the hermeneutic dimension in our theory of human sciences.

2) This hermeneutical dimension cannot be psychological or motivational understanding.

3) We must also be able to show how hermeneutical understanding in its own way has certain explanatory value and conversely how objective explanation also implies the possibility of understanding.

It is in the light of these requirements that we can now turn to hermeneutics of human sciences. In the later developments of hermeneutical tradition, Paul Ricoeur recognizes the reciprocal relation between the explanation and understanding. Let us see how it is possible.

From Understanding to Explanation

According to Ricoeur the four traits of an oral speech are also applicable to a written discourse or to a text. Not only so, we have also seen that a text exceeds the boundaries of these four traits, viz., temporality, subject, referential world and the addresses. Hence, there can be many possible non-ostensive references of a text, on every new occasion and with every new reader. That means, each
reader is treating a text as a whole or totality. Similarly, when the reader interprets the text with a new meaning, he is referring to a particular dimension, some part of a text and not a whole text as such. Thus, the text and its possible interpretations can be explained in a part-whole relation. In order to interpret the parts, one should first understand the text as a whole. Understanding of a text enables one to explain various points of views of the text. These various explanations provide a plurivocity of meanings. With the plurivocity of meanings, an objective explanation of a text is possible.

Further, these various interpretations or explanations can be treated as guess-works. These are the constructions upon a text which are built up in accordance with how one conceives the text, hence these can be called as guesses. Moreover, as guesses they have a peculiarity of being validated. Though, one cannot give rational grounds for the guesses; a method of their validation is possible. However, being subjective, these explanations function as evaluative judgements of the text. One, therefore, needs a different kind of logic to evaluate these guesses i.e., not a two valued truth functional logic, but a logic of qualitative probability. This
means that these guesses are never verified but can be falsified. This method of validation proves a text as giving an objective and a scientific approach.

The part-whole relationship has an important consequence for our purpose. It shows a circularity among parts and whole. With this circularity one can approach a text from two directions i.e., first, the understanding of an objective whole and then, the subjective explanation of its possible parts. More importantly, it shows a hermeneutical circle. In the similar way, the paradigm of a text helps us to show the relation between explanation and understanding or how understanding is necessary for something which is explained.

Explanation to Understanding

A clue to go from explanation to understanding is again found in the referential function of a text. A text goes beyond its referential world and has some non-ostensive references. However, the ostensive references are common to both - an author and a reader, but the non-ostensive references raise two positive ways to look at a text.
1) By first as we have seen above, a reader tries to actualize the potentials of a text according to the ostensive reference of the reader himself i.e., how a reader explains the text according to his own understanding of that text.

2) At the second level, the reader remains in suspension about the kind of the world that is explained in the text.

It is this second level, where we can possibly move from explanation to understanding. This way is exemplified today by different structuralists' schools of literary criticism. It proceeds by bracketting the ostensive reference of the text and then locating the text within that worldless place. Ricouer illustrates with the help of structural analysis of a myth as stated by Lavi-Strauss. In any myth, there are many units or mythemes as Levi-Strauss calls them. These mythemes are related with each other. Moreover, each one of them acquires its meaning only in relation with the other mythemes. According to Lavi-Strauss, these inter-related mythemes provide a bundle of relations by which a meaning function of a myth is acquired. This is how
a myth is formed, which he calls the structure of a myth. These mythemes, thus, explain a myth. Though it explains, the structure, it does not interpret the myth. In order to understand what a myth means, one has to use the method of 'epoche' or 'suspension'. What we understand by this method is thus not something hidden behind the text, in fact, it is disclosed in front of a text. Thus, what is disclosed is the depth meaning while what is explained is the surface structure of it. The task before us is to understand the in-depth meaning of a text by way of structural analysis or by the method of suspension. The structural analysis is thus, a necessary stage between the surface and depth meanings.

This is how, to understand a text one has to follow its movement, from what it says to what it talks about, or from its sense to reference. This is again provides us a hermeneutical 'arc' because here also a text speaks about a possible world and a possible way of orientating one self within that possible world. These possible dimensions are disclosed in the text itself, however, apparently they disclosed in what a text explains. That means, what is opened by structural analysis is the appropriation of what a text talks about. To understand one discloser or the appropriation one has to go beyond the limited horizon of what a text explains.
For our purpose what is significant about Ricoeur's hermeneutics of text is that he applies the hermeneutical model to the understanding of human action. In so far as human action is regarded, as the primary subject matter of human sciences, it is obvious that such an application may function as the source of an original philosophy of the human sciences.

The suitability of the text model to human actions may be pointed out on general as well as specific grounds. Regarding the general suitability of the model, we can merely remark that the concept of action has always been associated with the hermeneutical categories such as meaning, intention, purpose etc. This connection between the discourse of action and discourse of meaning is found in both philosophical as well as in social theories.

From a philosophical point of view, the basic idea is that human action differs from the bodily motion in so far as it is meaningful or purposive. In one way or other, action theory would make a conceptual connection between meaning and action. This conceptual link is particularly clear in works of Taylor, who also takes up the
basic insight of Ricoeur in a different way. For Taylor, language is constitutive of action. The converse of this idea, viz., use of language itself is a kind of action, as we have in the speech-act theory. Hence, we may talk in terms of a reciprocal relation between language and action. But on more specific, sociological grounds, the concept of action has been referred to as subjective as in works of Weber.

Apart from these general connections between language and action, we might specify the relation in more concrete manner. At this level, some of the insights of Ricoeur appear particularly valuable. The first important similarity is in terms of what hermeneutical theory calls the hermeneutical circle. With regard to language it has been pointed out that meaning of an utterance presupposes the general linguistic context of which it is a part and conversely, meaning of a whole depends upon specific meaning of parts. It has been further pointed out that the understanding of meaning moves in circular manner i.e., in the relation of parts and whole. Ricoeur points out actions with a similar structure. A specific action is a part of a wider project, e.g., going to the library may be part of a particular scholarly research.
To understand a specific action, we must see its space and function within a particular context. But, meaning of the whole is articulated in the form of sequences and orders of specific actions. In this case too, there is a similarity to hermeneutical circle. This is the reason, why a hermeneutical model, designed for understanding text, may have a surprising ability to understand human action.

But apart from this, Ricoeur further specifies the similarities between utterances and actions. To follow Ricoeur at this level, we must first keep in mind his distinction between oral speech and textual discourse. Ricoeur makes two fundamental suggestions.

1) The structure of oral speech is similar to action.

2) The structure of textual discourse also have some similarities to what he calls the acts.

The distinction between oral speech and textual discourse is homogeneous to the distinction between action and act. We shall consider this
homology after we have considered the first level of similarly between oral speech and action and also the similarly between textual discourse and act.

With regard to speech as an utterance, it may be remembered that Ricoeur begins the discussion on the basis of a fundamental distinction between language and speech. Language is structured whereas speech is performance. Language itself is without meaning, but it is the enabling condition of a performatory speech. Applying this distinction in the case of action we might say that bodily condition of organism is comparable to language as system. It is thus a precondition of action, but is not attributed to bodily structure itself. Ricoeur distinguishes three modalities of speech that it has a subject, an addressee and reference. These three modalities can also be deserved in action. As, subject is, in a sense of unintentional addressee, an addressee, in a sense of oriented to and meaningful to others. With regard to addressee of action, Weber seems to differ from Ricoeur. For Weber, an action is subjectively meaningful, but social action emerges when the other is taken into account. Therefore, it seems that for Weber not all actions need to be social, but in Ricoeur sociability of action follows
from its intelligibility to others. To act, is to perform something which can be interpreted. Here again a model of language is seen. For, to use language is to allow the possibility of interpretations of others. Wittgenstein points out this by showing the impossibility of a private language).

Speech also has a reference, i.e., it is about a context in which it takes place. For Ricoeur too, action has intentional character of being about something. Thus, at the first level, structure of action and speech seems to be the same.

Ricoeur further says, that even at the next level, structural similarity between a text and an act is preserved. We might remember that the textual discourse for Ricoeur transcends the intentions of author and it is also available for endless interpretations by others. Thirdly, even the reference transcends from action, to an act which can be imagined. An act here, may have a significance which is not reducible to the intentions of the agent. It is this possibility that significance of an act transcends personal intentions of an agent which makes the socio-historical interpretations interesting and significant acts. This means, meaning of an act
is constituted in the interpretations of it. This point, Ricoeur has developed in his book, 'Time and Narrative'. The historical significance of an act is constituted by the various interpretations of it and since there are many such interpretations, the meaning of an act is also inexhaustible.

Further, like a text disclosing a world, a historical act also reveals a new understanding of the world. It has a reference, but, more like a reference of the text than that of oral speech. These analogies pursuit Ricoeur to suggest that what the text is to oral speech, is the same, as what an act is to a personal action.

Before going further, it may be noted that Ricoeur is not just developing a hermeneutical theory of action but the analogy of the text allows him to introduce a concept of an act having various layers of meaning and open to endless interpretations, disclosing new aspects of the world. This concept of act is what social and cultural sciences require, for we do not need a distinction between action and act. Explanation in social sciences is reducible to specific actions of individuals. Since action is motivated, such an attempt leads to psychological
action of social phenomena a danger into which Dilthey falls. Ricoeur is unable to overcome psychologism by the text model.

Since our real purpose is to move towards a hermeneutical dimension of natural sciences, it may not be necessary to consider the further details of Richear's text model of action. More important for us is to describe the possibility of an extension of hermeneutical point of view from human sciences to sciences of nature. Since Ricoeur has not directly taken this step, we may have to go beyond Ricoeur. But some suggestions in Ricoeur's later work seem to suggest such a possibility. Therefore, a brief consideration of hermeneutics of science of nature as suggested by Ricoeur is necessary.

Ricoeur's, 'Time and Narrative' is primarily concerned with the further developments of his earlier hermeneutical theory of textual understanding. These elaborations generalize the problem of textual understanding under the category of narrative. As Ricoeur uses it, a concept of narrative has a very broad connotations, including in its scope,

1. fiction or rhetoric,
2. historical accounts,
3. the actions of human agents.
In this broad sense narrative is a form of organisation which makes its subject matter intelligible.

Another important idea in Time Narrative is that what a narrative organizes is the experience of time. Temporality becomes intelligible only in so far as it is shaped by the category of narrative and reciprocity a narrative is a form of organizing temporality. Hence, a concept of time and Narrative reciprocity constitute each other, within the limits of Ricoeur's earlier hermeneutics of text and action. A newer addition is the idea of temporality. It is certainly true, that in earlier works the idea of temporality was not omitted. But now it acquires a more fundamental significance and occupies a commanding position. For our purpose, however, the further developments of Ricoeur's hermeneutics of text based on temporality is not of so much importance. But what is significant for us is that Ricoeur introduces 'a dimension, 'time', which is also a fundamental structural feature of the natural world. Ricoeur does not distinguish between temporality of nature and human experience. What is hereby significant is that the meaning of temporality is made accessible with the frame of a narrative organization of time. Temporality thus, becomes the historicity.
We might remember that Dilthey started with the notion of historicity of sciences. But in his hands temporality of nature and historicity of human experiences appeared incommensurable. But with Ricoeur, understanding of historicity has widened and within his theory one can significantly speak of historicity of nature. This idea of certain historicity of nature itself not only softens the epistemological break between natural sciences and human sciences, but also allows us to understand how there is a hermeneutical element in sciences of nature themselves. Ricoeur himself does not spell out this implication of his reflections. But his basic idea that time becomes significant only so far as structured in sciences of nature, suggests that understanding of nature includes the narrative organization of it. In this way one could take up the claim in the very concept of nature as an object of sciences. There is a place for structuring or organization of our cognition. What is important to recognize here, is that temporality of nature is not something which is given merely as datum. That kind of position leads to the distinction between time of nature and human history. But, Ricoeur's point is that time becomes significant in form of nature and concept of nature.
as a hermeneutic concept. It is this, which makes history of nature a hermeneutic project. Once this is seen, then it is easy to add to this idea the significant point that natural sciences conceived of nature as dynamic. This is indeed the theoretical break-through of modern science. Newton also recognized the scientific cognition of phenomenon as dynamic. This has taken a variety of forms within physical theories, e.g.,

1) Newtonian dynamics in the light of laws of inertia and gravitation.

2) Theories of energy where matter itself is seen in terms of energy or force.

3) Thermodynamics, etc.

But, whatever form the dynamical conception of nature may assume, what is common to modern understanding of nature is, in terms of its developmental laws. It is this mark of modern natural sciences that distinguishes it from antiquity. History of science has recognized the contrast between the classical and modern concept of nature. But what Ricoeur adds to this is a deeper insight that history of nature itself has a certain hermeneutical worth. It is in this form, one can begin to take up the hermeneutics
of nature. It is certainly true that there are only scattered indications of a hermeneutical possibility of nature, not only in Ricoeur, but in other philosophers and historians of science.

Since, the programme of hermeneutics of nature is still very much an implicit possibility, we shall attempt to indicate some of the lines, along which we may begin to discuss the hermeneutics of natural sciences.

But what is essential to recognise at this point is that without such a possibility, the distinction between natural sciences and human science may harden into a dichotomy. There is another reason, why programme of hermeneutics of nature is important for us. It has been argued that both, Popper's and Muhn's paradigm may be given a hermeneutical interpretation. This would imply that these philosophies of nature can be compatible with hermeneutics of nature. In the light of these suggestions, further we can briefly consider a shape of possible hermeneutic project of sciences of nature.
NOTES

2. Ibid, p.22.
6. Two such models of speech-act are of Austin's and Searle's. But these do not correspond to Dilthey.
7. Habermas, particularly has made this point. Bleicher, 1983, pp.146-164.
10. Ibid, p.16.


19. Ibid.