Max Weber's Methodology: A Probabilistic Perspective

Rudolf J. Faller
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MAX WEBER'S METHODOLOGY: 
A PROBABILISTIC PERSPECTIVE

by

Rudolf J. Faller

A Thesis
Submitted to the
Faculty of the School of Graduate
Studies in partial fulfillment
of the
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MASTER'S THESIS

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To Dr. Otto Faller S. J.
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CHAPTER I

INTRODUCTION TO THE METHODOLOGY
OF MAX WEBER

Overview of Objectives

In contemporary sociology, Max Weber's methodological essays are still considered and used as important and relevant. Weber is cited as an authority in methodological controversy. Our view of his methodological position is influential in the construction and acceptance of current sociological stances. It is the objective of this thesis to 1) support the contention that Max Weber's methodological essays have to be analyzed from two perspectives, one philosophical-theoretical and the other empirical; 2) show that parts of his theoretical-philosophic orientation and all of his empirical studies have been neglected in most contemporary sociological interpretations of his methodology; and 3) propose new perspectives from which Max Weber's methodology can be viewed.

The aspects of the methodology of Max Weber that have been emphasized in the last half-century were derived from the articles collected after his death under the title Gesammelte Aufsätze zur Wissenschafterlehre. The orientation of these articles made him
known as a philosophically oriented theoretician in sociology. (11, 16, 46) He has become known for several approaches in sociology; first as an exemplar of historical analysis, in which contemporary institutions are analyzed in their relation to historical developments. (12, 20, 23, 53) Secondly as a prime originator of idealistic-oriented sociology within the German tradition from Kant to Rikert and Burckhardt. (51, 20) Thirdly, as one of the founders along with Durkheim of the sociological context as a basis for the development of sociological theory and social analysis. (10, 12) Finally he is identified as an advocate of the verstehen approach.

There are two not entirely consistent modes of interpretation of Max Weber's methodological work: on the one hand, his methodological ideas have been interpreted in light of his general sociological ideas (5, 26), on the other hand, his analyses of society have been interpreted as an explanation of his ideas about methodology. Max Weber's methodological ideas have been interpreted and discussed as derived from and shaped by his political affiliations and convictions. (14, 15)

Understanding Max Weber's methodology is important because fifty years after his death he is still considered one of the most important contributors to methodological thought and approaches. His intentions, his aims and his ideas concerning the framework
of sociological analysis, including methodology and their significance, are still outlined, viewed, and reviewed in contemporary sociology.

It is the purpose of this thesis to extend the critical analysis of Max Weber's methodology by the inclusion of the analysis of his empirical essays. In this way the understanding of Weber derived from his theoretical-methodological writings can be supplemented and reformed through attention to his empirical methodological writings. To illustrate this division and categorization of Max Weber's methodology, an attempt will be made in Chapter II to indicate what has been propounded by previous interpretations, particularly to specify the type of work considered by his interpreters.

Untranslated, theoretically oriented articles, and the empirical methodological facets of Max Weber's untranslated materials will be described in Chapter III. Finally, in Chapter IV, new directions will be proposed, through which the methodology of Max Weber can be interpreted.

Max Weber's Methodological Writings

Max Weber never attempted to write a methodological system or even to present his views in a systematic way. The intellectual

1 For further description of Weber's methodological articles see Chapters III and IV.
needs of his time and his ambition to clarify his positions led to
the writings which we call methodological: a) the theoretically
oriented articles; Weber expressed himself in two ways, first
through analyzing the authorities of his time, and then by merely
stating his own views on the individual issues (44), and b) the
empirically oriented articles: at the beginning of his career, Max
Weber was concerned with social problems and the methodological
impact of their investigation. He produced several works about
the workers in East Prussia. (43, 45)

In these works he concerned himself with the problems of
interviewing and the analysis of already existing data. His investi-
gations of the factory workers focuses on case studies and partici-
pant observations.

The methodological ideas related to Weber's empirical
research were presented intermittently over a long period of time.
Of all these articles referred to above, only a very few have been
translated into English.

The Relevance of Max Weber's
Methodological Writings

The question of the relevance of the methodological writings
arises on one hand from the fact that the very few translated articles
have had a significant impact on American sociology, and on the
other hand, because the totality of his methodologically oriented
dapers constitute a significant part of Weber's works. Max Weber's
articles, regardless of their length, are categorized in Figure 1 into
seven subfields. The presentation on the following page graphically
shows the relative amount of his writings in each field.

It becomes apparent that the empirical writings of Max Weber
outnumber his theoretically oriented methodological works. Their
numerical preponderance provides a significant basis for the
necessity to understand the role of empirical research techniques
in Max Weber's work. Since he clearly regarded some of them
methodological, as their titles indicate, a description and under-
standing of his theoretical-methodological works is not by itself
satisfactory. (Chapter III)

If doubt can be raised about understanding Weber's views about
methodology without reference to his empirical writings, should the
same questions be raised about his writings in other areas? His
political and economic works are far more numerous than his
sociological and philosophic-methodological ones. What contri-
butions, direct or indirect, do these make to our understanding of
Weber's perspective upon methodology? (Chapter IV)
FIGURE 1

MAX WEBER'S PUBLISHED WORKS IN SEVEN SUBFIELDS

Number of Articles

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1 Derived from (47).
The contemporary view of Max Weber's methodology is derived mainly from translations and interpretations of his philosophically-oriented methodology. Some of his main tenants are presented below.

Max Weber stayed within the German philosophical tradition when he insisted upon the differentiation between natural and cultural science and when he defined sociology---"the science of human behavior which we understand and explain"---as belonging to the cultural order.

His concern centered on the question of truth in cultural sciences which is actually a question of the nature of knowledge and possible validity in this field. Weber deals with his concern in his works on objectivity. Objectivity in the social sciences is understood as a "methodological rationalization of knowledge." This process of objectivity is carried out through the terms of 'means' and 'end.'

The conditions which permit us to use the phrase objectivity are two: value-judgments and the use of artificial concepts which bridge the cultural order and empirical reality. Weber perceives value-judgments in the following way:
By 'value-judgments' are to be understood, where nothing else is implied or expressly stated, practical evaluation of the unsatisfactory character of phenomena subject to our influence. The problem involved in the 'freedom' of a given science from value-judgments of this kind, i.e., the validity and meaning of this logical principal, is by no means identical with the question which is to be discussed shortly, namely, whether in teaching one should or should not declare one's acceptance of practical evaluations, deduced from ethical principles, cultural ideals, or a philosophical outlook. This question cannot be settled scientifically. It is itself entirely a question of practical valuation, and cannot therefore be definitively settled. (31, p. 472)

The ideal-type concept constitutes a "one-sided accentuation"

and serves as a heuristic means:

This procedure can be indispensable for heuristic as well as expository purposes. The ideal-typical concept will help to develop our skill in imputation in research: it is no "hypothesis" but it offers guidance to the construction of hypotheses. It is not a description of reality but it aims to give unambiguous means of expression to such a description. It is thus the idea of the historically given modern society, based on exchange economy, which is developed for us by quite the same logical principles as are used in constructing the idea of the medieval "city economy" as a genetic concept. When we do this, we construct the concept "city economy" not as an average of the economic structures actually existing in all the cities observed but as an ideal-type.

An ideal-type is formed by a one-sided accentuation of one or more points of view and by the synthesis of a great many diffuse, discreet, more or less present and occasionally absent concrete individual phenomena, which are arranged according to those one-sided emphasized viewpoints into a unified analytical construct (Gedankenbild). In its conceptual purity, this mental construct (Gedankenbild) cannot be found empirically anywhere in reality. It is a utopia. Historical research faces the task of determining in each individual case, the extent to which this ideal-construct approximates to or diverges from reality, to what extent for example, the
economic structure of a certain city is to be classified as a "city economy." . . . Carefully applied, these concepts are particularly useful in research and exposition.

What is the significance of such idealtypical constructs for an empirical science as we wish to constitute it? Before going any further, we should emphasize that the idea of an ethical imperative, of a model, of what ought to exist is to be carefully distinguished from the analytical construct, which is ideal in the strictly logical sense of the term. (31, pp. 90-92)

As Winckelmann showed, there are two issues which characterize striving for objectivity: his attempt to indicate the methodological relevance of cultural values for scientific operations and the logical relation between concept formation and empirical reality. (See Winckelmann, 47, p. 531) To understand this and to interpret cultural facts in this framework is the operation called verstehen.

Verstehen sociology means the understanding of social phenomena in their concrete reality through artificial concepts, which are cultural, and the verification of these concepts by understanding the nature of cultural knowledge. A fuller specification of this view of Weber's work follows in the next chapters with some indication of deficiencies in this view to be remedied by the inclusion of other parts of Weber's work.
CHAPTER II

THE INTERPRETATION OF MAX WEBER'S METHODOLOGY

In this chapter we present a portrait of the kind of interpretation Weber's methodology encountered in the last fifty years. In describing the interpreters of Weber we emphasize either their explanatory framework or their analysis of the empirical elements of Weber's methodology. Since the size of this thesis does not permit a full treatment of Weber's interpreters we included only those writers, whose view of Weber became well established and which are important in contemporary sociology, or those, who view facets of Weber's methodology which are important for the purpose of this thesis. The first part of the thesis, accordingly, describes the interpretation of von Schelting, Parsons and Becker; the following discussion at the Heidelberg meeting of the German Sociological Association underlines the relevance of Weber's ideas to contemporary methodology; finally, we describe the interpretation which Weber's methodology received in regard to its empirical-quantitative impact.
Philosophical-theoretical Interpretations of Weber

Alexander von Schelting

One of the earliest systematic analyses of Weber's methodology was von Schelting's book. (21) He attempted to describe all of Max Weber's methodological issues, but also to illustrate them by linking them to a philosophy of knowledge which serves as a basis of Max Weber's position on methodology, and to present his own systematic contribution in his methodological controversy with Karl Mannheim by analyzing and using the authority Max Weber, whose main ideas are identical with his (von Schelting's) own. Von Schelting criticized Mannheim: "His fundamental views on the problems of sociology of knowledge cannot be accepted because of their basic lack of logical and epistemological consistency and their incompatibility with empirical facts. The nonsense [of Mannheim] begins when one believes that factual origin and social factors as such in any way affect the value of ideas and conceptions thus originated and especially the theoretic value of cognitive achievements." (61, p. 664)
The question of knowledge in Max Weber's methodology

Alexander von Schelting regards his book on Max Weber's methodology as an attack and alternative to the relativism and relationalism of Mannheim's sociology of knowledge. In this review von Schelting talks about Mannheim but in his larger work cited he treats Weber in implied opposition to Mannheim without mentioning him. His aim, to propose Max Weber's methodology as a substantive alternative to Mannheim, is decisive because Mannheim's main philosophical questions are confronted with an extremely elaborated and systematic presentation of Weber's concepts of knowledge and objectivity.

Max Weber was very well aware of the social conditions which influence scientific knowledge. He maintained there is nothing like absolute knowledge or objective truth. Accordingly, knowledge to him was not a final end. His ethical convictions

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1 It may be noted that the term "Wissenschaftslehre" is not equivalent to "methodology" and that it is usually translated that way. Von Schelting is concerned with the logical structure of causal explanations and their relation to sociology. His attempt to present a systematic view over the various papers of Weber collected after his death can be questioned because they have been written over a long period of time and contain different emphases and interests.

2 The defensive character of the book does not appear through frequent use of the opponents' arguments, but through a limitation of the description of those issues of Weber which correspond to Mannheim's.
determined his focus of interest. His motives determined his scientific action and in so far there is a relation between motivating values which cause practical value judgments and the chosen scientific problems. In the writings of both Mannheim and Weber there exists a definite value-relevance (Wertbeziehung) between the scientific points of interest and the motivation of the scientist. To Mannheim this meant the relationalism between scientist and his causal analysis. Von Schelting shows that Weber's concept of knowledge and his differentiation between individual motives and logical validity transcend Mannheim's relativistic circle through his logic of scientific discovery. It has been mentioned that Weber regarded the decision what kind of knowledge is desirable as a value judgment and that he was aware of the diverse social factors which determine such value judgments. According to von Schelting, Weber believed that there exists no limit to available knowledge about concrete reality. Knowledge, therefore, meant to Weber validated information about one single aspect of the infinite reality. Since reality is diverse, multi-faceted, and multidimensional, the scientist selects one aspect, which serves his interest. This selection according to Weber, Mannheim and von Schelting is value-biased, since the focus of interest is largely determined by social and cultural conditions. Von Schelting explains, however,
how Weber's logic of analysis results in objective validation, although the subject matter in the social sciences is subjective.

The logic of procedure: Weber's comparative method

The scientist collects the seemingly relevant aspects of an entity and combines them in a typical combination, which Weber called the "ideal-type." This is a common sense operation and involves several value judgments. The scientific task begins when the ideal-type entity is separated into several factors and when each of those factors becomes separately analyzed and verified. Von Schelting constructed the logical steps leading to such verifications or causal explanations as used by Max Weber:

1) Analysis of the complex phenomenon or process [ideal type] in such a way that it is broken down into elements of such a character, that each of them may be subsumed under a general law. (Regel des Geschehens)
2) There is presupposed previous knowledge of such general laws.
3) Hypothetical elimination or alteration of one or more factors of the process concerning which it is wished to raise the question of its (or their) causal significance for the result.
4) Hypothetical construction of what would then (after the elimination or alteration) be the expected course of events. Application of the category of objective possibility.
5) Comparison of the hypothetical conception of possible development (really that which would have been possible had certain things happened differently) with the actual course of events.
6) On the basis of this comparison the drawing of causal conclusions. The general principle is that, in so far as
the two, the actual and the possible course of events differ, the difference may be imputed to the factors "thought away" or considered as changed. If on the other hand, this hypothetical change fails to make a difference the judgment is justified that the factors in question were not causally important. (18, p. 610)

Von Schelting maintains that the logic of this comparative method does not relate in any way to subjective practical value judgments, but rather that it provides a firm basis for causal relations because they are part of a generally accepted, formal procedure of validation. Therefore he insists the motivations which imply value judgments and which lead the scientist to the selection of a certain phenomenon to be investigated have to be differentiated from the logic of the procedure which is value-free in its process of verification. Objectivity then becomes a term, belonging to the field of logic, causal relation between facts exist only within these limits of formal procedure. And only within this framework we know objectively and we may even say: Fact is fact.

According to von Schelting, Max Weber's sociology of knowledge is reminiscent of the philosophical traditions which are committed to general explanations, i.e., his insistence on the generally accepted validity of logical procedures. It is the author's opinion that Max Weber's understanding of the relativity and social nature of knowledge is comparable to modern relativism and even to Karl Mannheim's relationism. Von Schelting interpreted Weber's
methodological papers as sociology of knowledge. In his book, Max Weber's methodology appears as the theory of knowledge and the logical structure of scientific explanation. Although this is a limited presentation, von Schelting's interpretation can be called the most influential one, since it determined the direction of the interpretations of Weber for more than thirty years. His aim is to present Max Weber's methodological ideas as a philosophy of knowledge and to offer it as an alternative to Karl Mannheim. This philosophically-oriented interpretation of Weber's methodological positions became the most popular one in German sociology. (18)

Talcott Parsons' interpretation of Weber's methodology

In American sociology, Parsons' treatise on Weber's methodological ideas has been extremely influential. From the time of the first edition of his Structure of Social Action in 1937 until 1949, when Shils and Finch translated some of Weber's articles, it served as the most thorough explication of Weber's methodology generally available in American sociology. In his early interpretations, Parsons follows von Schelting's interpretations (18, 19, 57, 58, 59), relegating to less importance the emphasis on the epistimological antecedents of the Wissenschaftslehre and placing more relevance upon the substantive sociological ideas of Max Weber.
He disagreed, however, with Weber on three main issues:

1) Weber's classification of science; 2) his concept of the ideal-type; and 3) his definition of verstehen. Parsons held that Weber's distinction between individualizing and generalizing methods in the social and natural sciences is reliable only as a distinction between means and ends.

[Weber's division between the natural and social sciences] is based . . . on the subjective direction of interest . . . not altogether clear and consistent, and hence it is that the first serious methodological difficulty arises. The . . . source of difficulty seems to lie in Weber's attempt to draw too rigid a distinction between the subjective directions of interest of the scientist in each of the two groups. (He questions) the extent to which that it is as unimportant as Weber maintained by implication in the sociocultural field. (18, p. 595)

Max Weber as reported by von Schelting analyzed complex phenomena or processes as ideal-types in such a way "that they are broken down into elements of such a character, that each of them may be subsumed under a general law. There is presupposed previous knowledge of such laws." (18, p. 610) Parsons noted (and von Schelting) that the nature of the ideal-type is not altogether clear: either elements of ideal-types are fictional "then the law is a generalization about this hypothetical entity under certain assumed conditions" (57, p. 676) or elements of the ideal-type are a general property, "then the law is a uniform mode of relationships between the elements." In short: according to Parsons, Max Weber failed
to make clear whether the pivotal attributes of the ideal-type were pictured as real. Parsons feels that he should have made that distinction and specified what kinds of elements he was including in any particular ideal-type.

In his interpretation of Weber's philosophy and sociology of knowledge, Alexander von Schelting stressed the objective nature of Weber's logic and methodology. This is what von Schelting poses as Weber's unique contribution in contrast to Mannheim's emphasis on the subjective nature of knowledge in the social sciences. This is the reason why von Schelting and his disciple T. Parsons fail to understand Weber's subjective terminology, above all the verstehen concept. Both authors considered the verstehen concept as problematic because "it was essentially unproblematic to Max Weber. It was a basic postulate of the social sciences and that was all." (18, p. 635)

Parsons usually evaluated Weber's contribution to the intellectual development in the Western World in regard to the human being in society and culture. He related Weber's thinking a) "to the historic consequences of German idealism which attempted to integrate historical individuality and the uniqueness of cultural systems," i. e., the dualism of Geist and culture, b) to the utilitarian movement, which he characterizes as "unifying cultural
and natural sciences," and c) to the philosophy of Karl Marx.  

(22, p. 42)

This presentation of Talcott Parsons' interpretation of Weber's methodological position is in no way complete. Only those portions of Parsons have been included in which he considered Weber's works as derived from and in relation to the main intellectual trends of the nineteenth century, and those in which he criticized Weber's classification of science, his ideal-type construction, and his verstehen concept. The closeness of his interpretation to that of von Schelting has been emphasized. Although Parsons' treatise contains sociological concepts and questions related to methodology in sociology far more than does Alexander von Schelting's book, his general orientation in interpreting Weber remains in the field of theory. Parsons offered no contributions of his own to the theoretical and empirical questions explicated in the next two parts of this chapter.

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1It is believed that an elaboration of those philosophical traditions transcends the purpose and limits of this thesis. All that is to be pointed out is, that Parsons and other interpreters made an effort to analyze and explain Weber in this background. It should also be noted that Talcott Parsons saw in Weber's contribution to structural functional theory (his concept of Sinnzusammenhaenge). This again, should not be elaborated in this thesis.
One of the earliest contributors to the interpretive works on Max Weber's methodology was Howard Becker whose systematic sociology was published several years before T. Parsons published his *Structure of Social Action*. As an outspoken historically oriented sociologist he complained: "One of the major shortcomings of contemporary American sociology is the general neglect of historical data and the consequent lack of interest in historical sociology." ¹ (50, p. 399) He recommended: "Cultural case studies, generalized in their comparable aspects by means of the ideal-typical method provide the necessary formulation for such a sound historical sociology, indeed for sociology of every variety." (50, p. 405) He concluded: "Without such freedom from the frogs-eye perspective of the immediate present, American sociology will remain essentially provincial and barren." (50, p. 405) His presentation of Weber's methodology remains in this framework: "Weber was an unflagging advocate of intensive culture case study, he opposed with fitting acerbity, all efforts to find modern capitalism in the

¹ In his discussion of Weber's methodology, Becker accepts Weber's position on the ideal-type and incorporates Weber's type in his own typology so that it can be used in historical analysis. However, Becker viewed Weber's methodology as "ideal-type-methodology" therefore, his influence in introducing Weber to the American sociological public of his time, remained largely in the field of typologies.
Greek world or to equate the Middle Ages with the era of the Eupatrids or to extract illustrations for a rigid sequence of stages of industrial revolution . . . from the Greek household or workshops." (2, p. 779) "He not only succeeded in finding comparable aspects in analysis primarily intended to render possible the sociological comprehension of particular historical configurations, but he was also able to make some of these aspects generalizable through his use of the ideal-typical method." 2, p. 779)

Becker's discussion of Weber's methodology, which he understood as the "ideal-type methodology" and which resulted in the negligence of the auxiliary role of the ideal-type in the causal analysis as a whole, in the author's opinion does not criticize the position of Weber on the type; instead he extended his typology for the use of historical analysis, as pointed out by Honigsheim. (10, p. 121) In his discussion of Max Weber's methodology Becker accepts his position on the ideal-type and incorporates his own typology so that it can be applied in his social analyses. However, Becker viewed Weber's methodology as an historically oriented ideal-type methodology, and through him this view of Weber became influential in American sociology.
Debate involving Parsons, Habermas and Henrich

The most comprehensive approach to Max Weber's methodology was presented in 1964, in Heidelberg, where the German Sociological Association held its meeting in memory of the hundredth anniversary of Max Weber's birth. On this occasion, sociologists from several nations met in order to discuss the theme, "Max Weber and the Sociology Today." Talcott Parsons presented in a lecture entitled "Value Judgments and Objectivity" his interpretation of Weber's methodological ideas as they related to the German idealism, the utilitarian, and Karl Marx. His presentation was followed by a lively discussion on the subject. (22)

The first speaker, Max Horkheimer, argued that any theory of society can not exist without values, which maintain a critical distance for the status quo: "To portray bourgeois society by its own ideas of freedom and justice, the rights of the individual, continues the discrepancy between idea and reality." (22, p. 67) Karl Albert argued in opposition that value-free sociological theory has been an instrument of sociological enlightenment and stands in strong opposition to conservative forces, which use sociological data out of their contemporary and methodological context, to prove the validity of their retrospective oriented ideology.
Juergen Habermas then defended the idea, that Max Weber's methodology can not be separated and analyzed from his general interpretations of trends and developments of his own times. He asks Parsons:

1) Is Weber's intellectual interest not directed towards an explication of the meaning of social processes?
2) Does the verstehen approach not lead towards the adaption of traditional value sets?
3) Is Weber's "Wertbeziehung" (Value-relevance) only related to the problem of topic-selection or does it influence theory construction itself? [as Horkheimer argued]
4) To what extent can methodological decisions, relevant to empirical research be discussed in connection with sociological processes? (22, p. 75)

Dieter Henrich replied that "empirical science has remained in a relative independence from the consensus of a culture."

Accordingly, every theory of social impact requires a "rational control of its prerequisites." (22, p. 84) Weber's concept of empirical science cannot be seen as a technique of power manipulation, since he always strongly emphasized the necessity to test all consensual prerequisites involved in theory construction. He never consented to the formation of a functional independent theory derived from knowledge based solely on experience. Parsons then answered Habermas:

Habermas imputed to me an unduly narrow interpretation . . . do I confine the relevance of the concept of Wertbeziehung to the posing of problems? I would say, most definitely not, because I think the crucial thing is that objectivity in the social science must balance and integrate the values and
standpoints of the investigator and of the objects of his investigation. The fact that values are on one hand, accepted by the objects and, on the other, are accessible to understanding by the observer is a crucial thing. If you take values as the focus of the culture of a society . . . treating them as the institutionalized focus of the normative order of the society, we may assume, that the values state the premise which the more detailed normative order rests in a complex set of interdependences. (22, p. 27)

Another point Parsons makes is Weber's insistence on the relevance of comparative studies in connection with the problem of causality:

Without comparative studies the isolation of variables which is necessary for the imputation of causality, is not possible . . . and the thing I would say there is simply that the comparative method and the aspect of Wertbeziehung which is involved in the comparative method preclude the denial of the possibility that values can be analytically studied, that they must be capable of being analyzed into components which within limits are independently variable. (22, p. 27)

Habermas, however, argues that Weber neglected to emphasize the concrete cultural, historical and political significance of the phenomena to be analyzed because he overemphasized the role of pragmatic-technical reasoning. This reasoning, however, parallels Weber's philosophy of the status quo. He argues that Weber's types of authority--rational-legal, traditional, and charismatic--coincide with his philosophy of history, from which he viewed the development of societies. Habermas asks does not Weber's enthusiasm for the combination of an effective bureaucratic system and a charismatic leader anticipate the events of 1933 and thereafter? Parsons replies that "in the English speaking intellectual world; and there of course
exactly the opposite is held to be the prejudice of Weber. It is alleged that Weber didn't really appreciate the kind of thing the technical economist would be concerned with. That is, according to this line of argument, that he was much too much influenced by German Idealism and Historicism and that sort of thing. This is exactly the opposite criticism of Prof. Habermas who seems to be afraid that Weber and my interpretation of Weber are in danger of too great a loss of the great traditions of German thinking in the Kulturwissenschaften. I think it is very important that a careful balance should be held here." (22, p. 77)

The discussion of Max Weber's philosophically oriented methodology at the Heidelberg meeting did not provide any solution out of the dilemma. Basically it was the same kind of problem Max Weber faced, when he tried to explain to his colleagues his position on objectivity and value judgments. They would not understand, and after a very long tiring session he gave up, temporarily at least, Alexander von Schelting, in his 1933 work, tried to defend this position against the relationalism of Karl Mannheim, and Parsons, in 1965 defended Weber's view against Mannheim's successor Juergen Habermas. The nature of interpretations has not changed in the last sixty years, only the interpreters. Weber's position was defended by von Schelting, Parsons, Albert, Freund and Henrich, while Weber's antagonist, Schmoller, was followed by Mannheim,
Horkheimer, Adorno and Habermas. All these interpreters of Weber, however, his opponents and those defending his ideas, are theoretically oriented sociologists or philosophers. Thus, the question remains open to what degree his basic methodological ideas and writings can be labeled empirical quantitative. The last parts of this chapter describe some interpretations which analyze some of Weber's concepts in this respect.

Criticism Regarding the Applicability of Weber's Methodology for Empirical Social Science

In the following section some of the interpretations dealing with the role of quantitative or quasiquantitative procedures and concepts in Weber's methodology will be discussed. Most of these interpretations are directed to the problem of quantitative validation of the ideal-type concept, the verstehen approach, and the comparative method.

The latest interpretation of Max Weber's sociology, including his methodology in American sociology is Julien Freund's book. This interpreter analyzes the sociology of Weber's in a similar way to that of Talcott Parsons. Freund is strongly convinced, however, that quantitative validations in the social sciences and the use of mathematical models were strongly repudiated by Max Weber:

Weber poked fun at those who... attempted systematically to reduce all social life and social phenomena to a mathematical formula. What can figures add to phenomena whose
meaning is self-evident? They are likely only to introduce confusion into perfectly clear problems and give scientific appearance to work, which does not deserve that name. . . . What matters is to distinguish clearly between a numerical measurement which can help us to grasp a problem and the fashionable pseudoscientific approach, where a difficulty is thought to have been resolved simply because it has been dressed up with figures, equations or graphs. (5, p. 44)

Freund's appraisal of Weber's qualitative-theoretically oriented concepts is not shared by other interpreters. Hempel criticized the unsophisticated use of ideal-types, its imprecisely stated elements which do not permit the necessary separation between definitions, description and hypotheses:

Ideal types are usually introduced without even an attempt at specifying appropriate criteria of order, and they are not used for the kind of generalization characteristic of ordering types; rather they are involved as specific devices for the explanation of social and historical phenomena. . . . In intent at least, ideal types represent not concepts properly speaking but rather theories. (9, p. 71)

Hermann Wetter, however, holds that the ideal-type was never meant that way by Max Weber ("the ideal-type is . . . utopia") but can be modified in order to be used as a model in empirical research. He attempts to approximate the variables of an ideal-type construction increasingly close to empirical reality, where they can be tested, so increasingly high probabilities can be obtained.

At the early stage of this scientific process the type will lack general applicability. But as variables with low probability (that is variables that are not really essential for the constructed ideal types)
are eliminated and only those with high probability retained, i.e., variables which are essential to the type, the type will gain in general applicability. He suggests how variables in an ideal-type construction can be brought increasingly closer to empirical reality and how they can be tested that increasingly higher probabilities can be obtained. Vetter's basic aim was to replace Weber's comparative method, which was interpreted by von Schelting and Parsons as qualitative, with quantitative correlational analysis in order to test the variables (von Schelting and Parsons: elements) of the ideal-type. In his description of Weber's ideal-type he referred only to those writings in which Weber explains theoretical concept formation in historical analysis.

Similar to the controversy on the empirical testability of ideal-types, several interpreters investigated the empirical attributes of Weber's Verstehen concept and the quantitative nature of his comparative method. Although, as B. Andreski has pointed out, Max Weber was by no means the founder of the Verstehen concept, he became labeled in a stereotypic way to be "the" verstehen sociologist. (48) Accordingly, most of the relevance but also criticism is related to or burdened on Max Weber.

In 1956 Albert Pierce wrote an article in which he attempted to show that Max Weber's verstehen concept is not an empirical one:
Verstehen involves the imputation of motives for social action in terms of the relation of means to ends, the action qualifying as social to the extent that by virtue of the subjective meaning attached to it by the acting individual it takes account of the behavior of others and is thereby oriented in its course. (60, p. 132)

Pierce argues that verstehen of subjective intention cannot be empirically tested:

It has to be distinguished between verification of empirical properties and objective confirmation of a definition . . . Weber's type of action cannot be confirmed empirically in any scientifically acceptable sense of the term; Even though it has objective reference in the form of observable behavior . . . its prepositions can only be illustrated. It is thus evident that while subjective factors cannot be ignored in the sociological analysis, the particular manner in which they are utilized in Weberian analysis, disqualifies them as empirical. (60, p. 133)

Peter Munch replied to Pierce in an article, "Empirical Science and Max Weber's Verstehende Soziologie." He claims that "Pierce attempted to demonstrate the non-empirical nature of Weber's method of Verstehen but, . . . missed the mark partly because of a peculiar conception of empirical . . . Pierce is suggesting a conception of empirical which deviates strongly from the conventional meaning of the term." (56, p. 27) Munch defines empirical according "to the etymology and by general consensus (confirmed by all dictionaries) as relating to or based on experience or observation. The only process which is purely empirical therefore is the immediate apprehension of sense impression . . . it follows that a purely empirical science is a contradiction in adjecto." (56, p. 27)
Besides this conceptual misunderstanding, Pierce's argument does not contain any relevance, since Max Weber never claimed that Verstehen could be used as an experimental device. To him it meant, according to Munch, an analytical procedure.

The dialogue between Pierce and Munch presented above is only one of many criticisms of Weber's verstehen concept from the perspective of empirical research. Similar to Pierce, Ernest Nagel is critical of Weber's verstehen sociology, especially his verstehen of meaningful connections. Nagel claims that the subjective nature of the subject matter in the social sciences makes the goal of objective explanations imperative. The subject matter in the verstehen process, as perceived by Weber and quoted in Nagel, is the explanation "of responses, men make to the action of other men, in light of the expectations and evaluations concerning how these others will respond in turn." (16, p. 474) Meaningful explanations, according to Nagel, employ two types of assumptions, which question their claim of possessing objective evidence:

An assumption, singular in form, characterizing specified individuals as being in certain psychological states at indicated times . . . and an assumption, general form, stating the ways such states are related to one another as well as to certain overt behavior . . . however, neither of such assumptions is self-certifying, and evidence is required for each of them if the explanation of which they are parts is to be more than an exercise in uncontrolled imagination. (16, pp. 482-483)
Although Nagel does not exclude the Verstehen method as a procedure for finding the origins of the intended explanation, he remains critical of Weber:

Competent evidence for assumptions about the attitudes of and actions of other men is often difficult to obtain; but it is certainly not obtained merely by introspecting one's own sentiments or by examining one's own beliefs as how such sentiments are likely to be manifested in overt action—as responsible advocates of "interpretive" explanations have themselves often emphasized (e.g. with vigor and illumination by Max Weber). (16, p. 483)

In sum, the fact that the social scientist, unlike the student of inanimate nature is able to project himself by sympathetic imagination into the phenomena he is attempting to understand, is pertinent to questions concerning the origins of his explanatory hypothesis but not to questions concerning their validity... his sympathetic identification with... individuals... may indeed be heuristically important in his efforts to invent suitable hypotheses which will explain the process... it does not by itself, constitute knowledge. The fact that he achieves such identification does not annul the need for objective evidence assessed in accordance with logical principles that are in common to all controlled inquiries to support his imputation of subjective states to those human agents. (16, p. 484)

Nagel viewed the lack of quantitative verifications as the main difficulty of Weber's verstehen concept and of his comparative method. The adaptation of quantitative procedures to the ideal-type has been the main concern of Vetter, and many others before him.

Weber's methodology, but especially his ideal-type and verstehen concepts have been used in American sociology in the most extreme directions. They have been viewed as related to
the structural-functional approach, as a contribution to the formation of new sociological concepts, as empirical devices, but mostly in regard to historical sociology. His methodological concepts have been transformed in order to be more "adequate" to the standards and needs of contemporary sociology.

Conclusion: The Perspectives of Interpreters of Max Weber's Methodology

Many of these uses have not been discussed in this chapter. Many authors used Max Weber in their own works or interpreted his methodological concepts by the way he used them. This has not been discussed either. With the exception of the discussion of Nagel, all authors discussed here have been major contributors to the interpretation of Max Weber's methodology. It has been the aim of this chapter to indicate that those interpreters dealing with the methodology of Max Weber were either not empirically oriented (von Schelting, Parsons, Freund), or, when dealing with the empirical nature of Weber's methodology, neglected to use his empirical oriented methodological writings or viewed him with a positive attitude as far as the quantitative nature of his concepts and method is concerned (Nagel, Pierce, Vetter, Munch). The

1 An extensive discussion of their approaches can be found in McKinney's book (13).
criticism concerning Weber's notion of quantification centered on the following issues:

a) Ideal-types: Do ideal-types represent concepts or theories? (Hempe); can they be transformed into models? (Vetter); or Constructive Types? (McKinney)

b) Verstehen and Comparative Method: Is the Verstehen concept an empirical one? (Pierce); can it lead to objectively confirmed truth? (Nagel)

In addition, Weber's methodology has been criticized because of its inherent logic: Parsons remains critical of Weber's ideal-type, and its logical impact, while Horkheimer and Habermas criticize Weber's value-free analytical approach as irrelevant to his approach to politics, and his concern for scientific objectivity as sanctioning the existing system of cultural attitudes and socio-political domination. In the following chapters these two main sets of problems will be considered: to what degree can Max Weber's methodology be labeled as quantitative? and what are the cultural, economic and political effects of his "value-free procedures" in his methodology (philosophical-theoretical and empirical-oriented)? These questions and issues are an index to the topics to which Weber's methodology is thought to be confined. These questions are developed in light of the other materials to be described in the next chapters. Even though these questions are raised, the
dominant view of Weber's methodology in contemporary sociology is most influenced by the interpretations of von Schelting, Parsons and Becker.
CHAPTER III

THE UNTRANSLATED OR NEGLECTED PARTS
OF MAX WEBER'S METHODOLOGY

The Theoretical Writings of Max Weber

In this chapter, Max Weber's methodology will be described as he describes it, mainly in those articles which are not translated into English. An attempt will be made to describe his emphasis on quantitative methods of verification and research procedures. Where his description departs from, expands or explicates what was said in Chapters I and II, will be indicated.

The quotations from the categories of the verstehen sociology article are contained in the new translation of Economy and Society; the verstehen article is not a part of the book translated into English, but, as the translators point out in the introduction, essential for the understanding of Weber's typologies.

1 The first part of this chapter mainly describes excerpts of Weber's essay, "Ueber einige Kategorien der Verstehenden Soziologie." This is listed in Chapter I as a theoretical article (although its content is oriented towards the possibility of empirical analysis). The other theoretical articles are mainly Weber's analyses of contemporary scholars: Roscher, Knies, Stammer, Wundt, Munsterberg, Simmel, Gottl, Lipps and Croce. They treat the values involved in the works of those authors and in the schools they identify with. (Historicism, Classic Economic Theory, German Idealism) The description of those articles could transcend the frame of this empirically-oriented chapter.
The first part of this chapter centers on the explanation of some of his sociological concepts related to the ideal-type and verstehen approach, as indicated in the first chapter. It is frequently overlooked that Weber was active in many areas. Most of his work is related to fields other than sociology. Sometimes he even had difficulties adjusting himself to the role of being a sociologist. Once he wrote to a friend: "I finally became a sociologist--according to my employment document--essentially because I want to finish the application of collective concepts." (22, p. 68)

According to Weber, sociology can be pursued only through the employment of a methodology, which is oriented to individual action. In the work on the verstehen sociology, Weber explicates this viewpoint. In our treatment of this viewpoint only those aspects of his description will be selected which constitute the inherent quantitative aspects of Weber's methodology. The term "probability" (Chance), the illustration of some of his action types related to this term, the term "mean" and "consensus," and finally the link between adequate and verstehen in sociology will all be examined.

**Ideal-type and probability**

In Chapter I the ideal-type concept was described in regard to its role in research: "This procedure can be indispensable for
heuristic as well as expository purposes" (31, p. 81); it was also
described as to its origin: "An ideal-type is formed by a one-
sided accentuation of one or more points of view and by the syn-
thesis of a great many . . . individual phenomena . . . " (31, p. 87)
In Chapter II some of the criticisms of Weber's interpreters were
presented, with special emphasis on those two aspects.

In this chapter it is intended to view this concept as treated
in "some of the (articles) categories of the Verstehen Sociology." In
this article Max Weber uses a deductive method of explanation.
He draws and illustrates the ideal-type concept and its pivotal
attributes from the categories of his verstehen sociology. In
most of his other methodological writings he explains the type by
concept and justifies it through induction. In this article, however,
he presents his idea by producing his examples of ideal-types.

The key concept in these examples is Weber's notion of what
is meant by probability. For example, he defines the term "Social
relationship . . . consists entirely of the probability that indi-
viduals will behave in some meaningful, determinable way." (54,
p. 190) Probability "determines the degree of verification of the
ideal-type." (44, p. 342) It can be determined through calculation
(44, p. 354) and therefore it bridges the gap between type and
reality. (44, p. 342) The probability concept limits the application
of the type to empirically verifiable cases, i. e., only real
"objective probable" cases can be formed into a type. The types of action illustrate the significant role which the concept of probability plays in Weber's methodology. The examples below indicate this:

We shall speak of Gemeinschaftshandeln (social action) when human action is meaningfully related to the behavior of other persons. Social action does not occur when two cyclists, for example, collide unintentionally; however, it does occur when they try to avoid the collision or seek one another afterwards or negotiate to settle the matter peacefully... An important... component of social action is its meaningful orientation to the expectation that others will act in a certain way, and to the presumable probabilities of success for one's own action resulting therefrom. Action can be understood rather clearly—and this is an important type of explanation—when there is an objective probability that these expectations are indeed well founded... " (43, p. 1375)

Social action is Gesellschaftshandeln insofar as it is 1) meaningfully oriented towards rules, which have been 2) established rationally with a view toward the expected behavior of the participants, and insofar as 3) the meaningful orientation is indeed instrumentally rational on the part of the actor. (43, p. 1376)

Another term which should be noted is Weber's concept of mass behavior: "When a large number of pedestrians react to a shower by opening their umbrellas, we do not deal with social action but with homogeneous mass behavior. (43, p. 1376)

Weber stresses that the transitions between Gemeinschafts-

Gesellschafts-action on one dimension, and from action to behavior are "empirically fluid." This implies a dynamic view of concept of type. The probabilistic verification process of those factors which should be included in the type is flexible enough to exclude those factors which are not relevant and to include factors which are.
This implies the realization of the idea of approaching phenomena in terms of objective possibility. The impact of this aspect of Weber's typologies will be discussed later in the next part of this chapter and in Chapter IV. He insisted that the probabilistic nature of the indicative elements of the types in relation to reality necessitates the use of the term probability in concept formation:

"IT IS ONLY THE EXISTENCE OF THE PROBABILITY THAT A CERTAIN TYPE OF ACTION WILL TAKE PLACE."

(43, p. 1375) Thus he defines power "as a probability that a person is in a position to carry out his will without resistance (44, p. 518), and he defines domination as the probability of obedience. (43, p. 1377)\(^1\)

Although Weber never made himself clear, he mentions the "Calculations of probabilities" (44, p. 441), the "probability which can be counted" (44, p. 443), and "the mean of probabilities." (44, p. 445) These phrases suggest to this writer the idea that to Weber, probability refers to a number.\(^1\) A probability of an indicator or event means the number of its actual occurrences and implies its calculation. If domination means the probability of

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\(^1\)K. Deutsch first expressed this idea, that because of the term probability, which means a number, Weber's political sociology could be analyzed statistically. (at the meeting in Heidelberg, 1964: Max Weber und die Soziologie Heute)
obedience, then it implies that the number of obeying persons
determine the degree of power. The probability, if Gesellschafts-
action takes place, means the degree to which the attitudes of
certain people are oriented towards rules.

One of Weber's rarely mentioned terms is his notion of
proportion (Durchschnitt). The individual, associated with
Gesellschafts-action for example, calculates the proportion of
times according to which other associates act according to
established rules; after calculating that proportion, the individual
orients his expectations and actions toward the result of his cal-
culation. (44, p. 448) This indicates a subjective interpretation
of Weber's understanding of proportions and he never clarified
whether he permits or presupposes a qualitative or statistical
measurement of this process. The calculation of expectations
could be understood in terms of his comparative method as described
by von Schelting; it could also relate to an attitude measurement and
an empirical investigation of the decision making process. In
the writer's view, Max Weber indicated implicitly the need for a
quantitative basis for the investigation of those calculations (see
next part of Chapter III, Psychophysics of Industrial Labor, and
Chapter IV). He, however, never felt the necessity to make
theoretically clear what seemed to him self-evident. His definition
of Gesellschafts-action permitted this interpretation. It indicates
that proportion can be empirically validated: in sociology, for example, Gesellschafts-action exists only as long as the proportion of meaningful orientation of its associates is linked to its norms and rules. (44, p. 410)

Weber used the term proportion numerous times in connection with "probability." As mentioned above, "domination" means the probability of obedience, which means the proportion of times people behave in a certain way. (44, p. 469) The normal expression of the empirical relevance of an order is the probability of its being obeyed, that means: a) the proportion of interpretations according to which associated persons calculate the orderly conduct of others as a probability and b) the proportion of their behavior oriented to their calculation of expectations of others. (44, p. 446)

A typical product of this approach is Weber's concepts of consent-action. Most of his action categories are basically consensual actions.

Consensus exists, when expectations as to the behavior of others are realistic because of the objective probability that the others will accept these expectations as valid for themselves, even though no explicit agreement was made. The reasons for such behavior on the part of others are irrelevant for the concept. Social action which rests on consensus will be called consensual action.

Of course the degree of consensus—in the sense of calculable probabilities—must not be confused with the subjective reliance of an individual that others will treat his expectations as valid. In the same way, empirical validity of an agreed upon action must not be confused
with the subjective expectation that others will abide by its intended meanings.

The relation between those two cases—between the highest degree of objective probability and the highest degree of subjective expectation—constitutes the relation of the adequate verstehen causality. (44, p. 456)

It has been shown that Weber constructed his sociological typology on an empirical level on the basis of probability. Weber wrote the article on Verstehen sociology in 1913, at the early stage of systematic empirical research in sociology. This means that he was not aware of many measurement techniques nor their impact on constructing typologies. Weber's outlook is consistent with modern sociology in one aspect however. He was neither satisfied with a purely subjective interpretation as to the motives of his actors, nor was he satisfied in creating types based solely on statistical equations. The need to combine both, a precise quantitative foundation and an interpretation which transcends the small range of testable propositions was an urgent one to him.

In the preceding section one main concern was to assess the extent to which Weber's type can be empirically verified. This was demonstrated by some of his terms like probability, his use of proposition and some of his types illustrated in reference to Gemeinschafts-action, Gesellschafts-action, consensual-action, and domination. There are questions which remain unanswered: How does this interpretation and description of Weber's ideal-type
relate to the description and interpretations in the first two chapters? What is the relation between those two descriptions of the ideal-type as described in these chapters to the concrete reality? These questions will be dealt with in the next chapter where we confront the traditionally held view of Weber with the materials developed above.

In the next few pages the relation between those empirical concepts used above and the verstehen method will be explored.

The link between them is again his term probability.

**Probability, causation and verstehen**

Weber's verstehen concept has been interpreted numerous times as an independent, subjective semi-scientific mode of interpretation. Both von Schelting and Parsons interpreted Weber's verstehen "as essentially unproblematic . . . and as a basic postulate that was all." (Chapter II) Pierce and Nagel questioned the empirical nature of verstehen. In this chapter verstehen will be viewed in light of Weber's concept of "adequate causation" and probability.

Max Weber frequently emphasized that "the verstehen of connections is to be controlled as much as possible by the usual methods of causal explanation, before the verstehen explanation is achieved." (44, p. 478)
He explicated this by his term "validity." Validity of type indicates the capacity for objective verification. Action types possess validity if they can be explained rationally in terms of causal connections. The "Richtigkeits-type" stands for "... the most meaningful causal connection and is therefore the most adequate verstehen type." (44, p. 434) The degree of validity of an action-type is an empirical one." (44, p. 457) Validity, in other words, refers to the degree of empirical validations of the type. The valid causal interpretations of action means a verified explanation of its external facets and motives and the verstehen of those in the explanatory framework. (44, p. 512)

Weber includes in sociology only those regularities which constitute statistical probabilities and can be interpreted in terms of their meaning. This means he viewed two kinds of statistical data: a) data which can be regarded as sociological because they are objects of meaningful interpretation (i.e., deviant behavior), and b) data which are sociologically meaningless such as precipitation statistics. Among the first category Weber maintained that "... statistical probability... of a causal relation and its verstehen together constitute the 'richtige' causal interpretation." (44, p. 416) His category of adequate verstehen causation constitutes then, a combination of a statistically verified "... Probability, that a certain type of action takes place" and the verstehen
of the findings in terms of their meaning and explanation.

In the writer's opinion this uncovers a new aspect of Weber's verstehen. The next part of this chapter illustrates the relevance of this aspect. Weber's own empirical research and his procedures should be combined with his empirically oriented verstehen, as explained above, and in connection with his probabilistic type constructions.

There remain some questions, however, which will have to be dealt with in the next chapter. For example, what is the concrete relation between causality, probability, verstehen and empirical reality? And how does this aspect of Weber's methodology relate to other aspects described in Chapter II? To find answers to these questions it will be necessary to describe Weber's empirical writings in some detail, since they constitute an almost unknown facet of his methodology in modern sociology.

The theoretical issues which are explained above demonstrate Weber's concern with the nexus between theoretical types and empirical reality—through his notion of probability—; they also indicate his concern which unites the two poles if explanation—quantitatively verified correlation of "objective facts" and qualitatively and subjective interpretation—into harmony through his combination of adequate causation and verstehen.
The Empirical Writings of Max Weber

Considering the broad attention and intensive interest Max Weber has received in contemporary sociology, especially in the United States and Germany, it appears as a major negligence that it took more than 45 years for his empirical articles to be discovered by Larzersfeld and Oberschall. (54) They introduced these writings for the first time to the American sociology in 1965 at a meeting of the American Sociological Association in honour of the hundredth anniversary of Weber's birth. In the same year, Oberschall published a book on the history of German empirical research, in which he described Max Weber's effort. (17) In Germany, these writings of Weber are still completely overlooked by his interpreters.

His empirical writings, nevertheless, represent a substantial portion of Max Weber's work—as shown in the Figure in Chapter I—and of his methodology—as will be shown in this section of the thesis. Some of the methodological ideas and problems, which Weber had while performing, explaining or proposing his research will be described together with the main content and purpose of the studies. This is preparatory to including them in a general analysis of Weber's methodology.
Weber was involved in six major empirical investigations. He prepared research proposals for studies of the news media, voluntary organizations and elite. He actually organized and managed the field work, however, only for his studies of industrial and rural workers.

He was not the only or first German sociologist conducting such research at this time. As Oberschall reports, one of the most interesting research projects at the beginning of this century involved Weber only slightly and was actually conducted by Adolf Levenstein. Levenstein was to present an empirical portrait of the blue-collar worker and his attitudes.

It should be emphasized that the description of Weber's methodological ideas related to empirical investigations does not contain a critical evaluation of those in light of contemporary research techniques. Although this would be a rewarding aspect, this thesis emphasizes the relation of his empirical writings of Weber to his theoretical oriented methodology as described above.

He undertook single-handedly the first great attitude survey on record and in many ways obtained the most successful results of all German surveys before the war [1914-1918] with over 5000 answers by his fellow workers. For several years, Levenstein refused to analyse and publish the results until Max Weber who had seen parts of the raw data, managed to persuade him to that effect. Levenstein eventually spent months of coding and tabulating and in some ways followed Max Weber's advice... Levenstein drew up a balance of indictment of
bourgeois society; on one side of the page, he added up from all the questions he asked to total the number of answers which expressed satisfaction or acquiescence of the workers to their lot in life, on the other side of the page, the total number of answers which expressed dissatisfaction, apathy or despair. (17, p. 7)

For contemporary sociology, Levenstein's survey still deserves interest because his data could be used for comparative analysis of workers' attitudes. Weber not only stimulated Levenstein to analyze and publish his findings, but, in addition, by reading Levenstein's raw data, Weber himself was inspired to write an essay on the methodology of empirical research in social psychology.

Weber made several attempts to establish an empirical tradition in German sociology.

During his life, he was directly involved in three surveys and planned two additional ones. He had helped to create the German Sociological Society with the hope of making available an association of professionals who would be interested in performing empirical research on large scale. At the time he also toyed with the idea of establishing a permanent social research institute. Perhaps the First World War, the premature death of Weber, the fragile empirical tradition of the twenties and finally the Nazi era have all contributed to breaking with this aspect of the past. (17, p. 8)

Max Weber had serious financial and professional problems in supporting his empirical studies. He spent months trying to collect some 25,000 Marks for his planned newspaper analysis, which he never was able to carry out. Two other proposals he
made also failed to win recognition and support by the intellectual establishment of his time. Lack of professional support and financial resources made him give up. His wife, Marianne Weber, reports that none of the 'famous' professors wanted to promote empirical studies. After eighteen months of effort, Weber conceded that he was a victim of the circumstances, he considered himself helpless to achieve meaningful results for the foreseeable future. His proposals on the analysis and role of the news media, and on investigations of voluntary organizations and elite professions never materialized.

The research which Weber actually conducted belongs in the field of industrial and rural sociology. In 1908 he published a sixty page methodological study entitled Methodological Introduction for the Survey of the Verein Für Sozialpolitik on the Selection and Adoption (Occupational Choice and Occupational Lot) of the Workers in Large Industries. (45) Weber specified that the survey and results were not designed to challenge the domestic status quo or to stimulate any social legislation. His purpose instead was to investigate a) the kind of hiring and promotion practices which are exercised by large industries as well as their consequences; b) the effects produced by the existence of the industrial complex upon the change of style of life of the population.
Weber's essay presents an outline or research procedures for doctoral candidates "who were to carry out the survey into the field and actually perform the tabulations and analyses." (17, p. 114) Marianne Weber noted that "he even mentioned [in his advice to the researcher] to add stamped envelopes to the mailed questionnaires, to provide a maximum of returns." (26, p. 3)

In the same year (1908-1909) Weber published a series of papers which he entitled "Psychophysics of Industrial Labor" (45) in which he discussed and described data which he had obtained by analysis of a weaving mill in the Rhineland, where he spent the entire summer of 1908 studying the management records and interviewing and observing workers to obtain this data.

The other area in which Weber undertook empirical research was rural sociology. Bendix and Honigsheim reported on Weber's investigations on the situation of the rural workers in Prussia. Weber conducted two surveys. The first survey was supported and administered by the Verein in 1892. The second investigation was undertaken by the Social Congress of the Protestant Church of Germany. In the first study he interviewed the Junkers, and he was severely criticized for doing so. At a meeting of the Verein, a critic of the investigation, Mr. Quarck, cynically recommended that the Verein study be renamed because of its method of data collection. He recommended that the Situation of
the Rural Workers in Prussia be completed by the phrase as described by their employers. (23, p. 346)

Weber defended his data source by raising the problem of questionnaire response; he noted that due to the illiteracy of a large proportion of rural workers one could not expect either large numbers of returned questionnaires, nor very accurate nor reliable responses if one used workers rather than employers as primary sources of data. He also added that he noted that his critics had not come up with an alternative research design for obtaining data from rural workers.

The questionnaires for the Verein study and for the church study are similar. The latter, which Weber sent to 15,000 pastors in 1893 (only ten percent returned it) included some changes which reflected experiences in using the former. As Larzersfeld mentioned, Weber prepared specific and detailed questions and divided them up into meaningful units in his questionnaire for the church study. Sections of this questionnaire are reproduced in this chapter, because the questionnaire illustrates the wide range of interest and the variety of variables Weber felt should be included if one were to causally assess the situation of the rural workers.
Weber's industrial studies are interrelated since both deal with an investigation of factory work. The larger study, however, is the Verein survey of the Verein on the selection and adaptation of workers in large industry. Weber intended the study to establish the following: on the one hand, the influences a large industrial establishment exerts upon the individual character, the occupational lot and style of life of its working force, what physical and psychological qualities it helps to develop in it, and the ways these qualities become manifest in the conduct of daily life of the workers; on the other hand, the manner in which the development and potential development of large industry is limited by those characteristics of the workers which are a result of their ethnic, social, and cultural origin, of their traditions and standards of life. (45, p. 1)

Weber emphasized the relationship of concepts to their operational specifications and uses. Three of his variables, which he considered relevant for this study, treated in this fashion are: worktime, work-breaks and bases of payment.  

\[1\] This factory research was never published in the intended volume; it never produced complete results, partial results however were published by Marie Bernays who "got herself hired incognito as a factory worker in a textile mill where she first spent four months of working, observing and making friends before she administered the questionnaire and immersed herself into the factory's records." (17, p. 128) Bernays, who was a Weber protege, in addition, "did succeed in administering the questionnaire to most of the workforce in the factory... also managed to get complete data from the factory office records on three years, 1891, 1900 and 1908, for a trend study of the shifting composition
distinguishes between work breaks which are granted on the basis of tradition, and work breaks which are rationally calculated to increase productivity and decrease accidents. His advice is to concentrate the analysis on the latter and attempt to find the optimal balance between length, frequency and spacing of breaks to achieve these goals. Time is considered as an indication of the workers' opportunity and his obligation (his lot). Time is also used as a potential indicator of special work tasks and a measure of their quality per unit of time. The former can be measured in number and/or quality of pieces completed in relation to time elapsed.

The rate of payment is another variable experimentally examined by Weber. He distinguished among research uses for rate of payment. It may be used to associate with the quality and quantity of work performed. Weber alerted his students to the [female mobility] of the workers. In once of those tables (p. 58) the entries in the table, cross-classifying some 15 occupational groups with age categories are the percent of workers who have stayed on in the factory from the beginning to the end of the year. Today . . . these percentages . . . are known as transition probabilities. Then she ranked the various occupational groups by the degree of their stability and mobility as expressed in these figures, and noted "that the degree of stability is a function of the higher social standing of a group is made plausible when we compare the degree of stability of the individual groups, and find, that the 'aristocracy' of the factory--the mechanics are very stable, but that its 'proletariat'--the dye-mixers--are very mobile." (17, p. 128)
probabilistic relationship between changes in the amount of wages and variation of work performance. He also indicated the probability of using rate of payment to identify groups of workers and their formation. These reference groups may have normative influences on the individual worker depending upon whether they are organized on an authoritarian or voluntaristic basis. The third use of the variable would be to specify workers most likely to be promoted by the management.

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1 This approach was actually used by Bernays, who observed that work inter-actions and group formations were made on this basis. However, she puts emphasis on the influence of the different rooms in the factory "which have a definite character, which is visible in the appearance and nature of people in them, even in the manner of dress... and she suggested that this separation of great masses of workers in a factory into individual small groups plays a role for the psyche of the individual workers that should not be underestimated. I would suggest that it saves him from sinking into the mass, from becoming a mere number, in so much as there exists a small circle to which he can belong and in which he can achieve some recognition." (17, p. 129)
Weber too reached that conclusion. He was also interested in what cases the rate of payment was irrelevant as an indicator for attitudes towards the work: "to what extent is the distribution of workers by their place of origin among the various types of jobs not only a result of their abilities to perform that particular type of job, but as a result of the reasons of their social evaluation of the particular jobs. (One example: the seamstresses in the textile factories evaluate their own type of work higher than the higher pain work of the female workers, because it is cleaner and resembles domestic housework and, as a result, one observes a more marked recruitment into seamstress jobs on the part of the city raised woman.)" (45, p. 53)
Max Weber considered three sources of data for this investigation, the records of managements, the product of interviews with workers and participant observation in the factories themselves. As mentioned above, this approach was followed by Marie Bernays.

One type of record available for this kind of research is the fiscal record of the company. They reveal the calculated utility of workers to industry. The following questions are relevant in this context: a) how wage systems differ in specific industries, b) the relationship between family background, education, nationality, etc. and work performance, c) the average time needed for the performance of a given work, d) the time needed for a worker in industry to attain maximum wage in that industry, e) the characteristics of workers who attain maximum wages. The personnel records provide the necessary additional information to this project: data on family status, income, number of dependents, education, place of origin, etc.

These data could be used in combination with the second source of data which would be comprehensive interviews of the workers with a structured questionnaire. Weber felt that structured questionnaires could be used to gather information about occupational history, financial status, and aspiration and occupational lot. He also felt that interviewing may also be used to assess individually the ethos of the subculture from which the respondent comes.
He noted that even responses which seem meaningless in relation to the content of the questionnaires can provide meaningful data about the subculture of the worker. The difficulties of securing data through the interviewer leads Weber to advise that respondents be given assurances of anonymity and confidentiality. He also suggested the securing of interviews through the intervening of unions.

Weber expected that the data obtained from these sources would be combined for the fullest understanding of the phenomenon. Through this combination, Weber aimed at the verstehen of the significance (Bedeutung) of the industrial complex for cultural change.

**Psychophysics of industrial labor**

Max Weber was concerned about the extent to which hereditary factors, or psychological, social and cultural factors were important for the development of the nervous and physical constitution of the workers and their relationship to work performances. Another research in the industrial realm in which Weber was engaged was an investigation of these variables.

A methodological product of this research was Weber's discussion of the three levels of interpretation and measurements.
involved in the survey. They are a) variables which can be interpreted as conscious actions: there are changes in work activity which are rationally produced by the worker. For example, workers accelerate or decelerate their activities (quantitatively and qualitatively) to get higher piece prices or wages or to remain at a certain working speed for a certain payment; b) physiological-psychophysical variables, which can be explained by the functions of the organism in a way about which individuals are often unconscious. The function can be explained as facts only by their effects: the changes in job activities. For example, a rational calculation of work breaks may increase industrial output and the workers may never become aware of the fact that their productivity has been increased nor why; and variables c) which can be understood as reconstructed motivation. Behavioral and attitudinal changes may be motivated by factors connected with the job or by factors in the worker's personal life. He may or may not be aware of the connection between these factors and the changes in his attitude behavior. What motivated these changes may become apparent to the investigator and to the worker if, either the worker can be made to reconstruct his work and family situation and consider their relationship to his job performance, or if the investigator reconstructs such a relationship with the available data. For example, a deceleration of
a worker's average productivity as an effect of his psychological
preoccupation with his marital stress. Weber notes the existence
of numerous combinations among these three levels of interpreta-
tion in empirical reality. He categorized them according to his
classification of science, since they do not complicate beyond
measure a purely psychophysical treatment of industrial work.
(45, p. 133)

Weber also deals with the methodological impact of statisti-
tical interpretations. He raises the question as to whether the
selective use of typical cases or the computations of proportions
and other measures of central tendency is the more yielding
procedure for the causal analysis of production output.

Weber stated the question this way: "Methodologically
important is the specific question whether an exhaustive causal
analysis 1) of a few individual production and earning curves or
2) the total sum of figures expressed as averages . . . will yield
a better knowledge of the factors of productivity."¹ (45, p. 135)

¹Oberschall reports on Weber's causal analysis; " . . . Weber
carried out just such an exhaustive analysis of a number of indi-
vidual production and earning curves in order to determine 'just
what chances an attempt might have to trace the differences in
worker output back to such [characteristics] sources as inherited
characteristics, cultural, social and occupational environment.
The variety of factors explored ranged from the influence of
humidity, the temperature, the time of the day, sex, age, the
type of work, the quality of the fabric being worked with. He
He was convinced that measures of central tendencies, especially means of piece rate wages are not significant to the explanation of productivity. In order to discover how individual wages are established, Weber concluded, it was more useful to obtain data about several "dozens of individual cases which are highly accurate and precise... than to obtain mechanical

even followed the fluctuations of output over ten months of a single weaver who had been shifted to a new machine in order to study the influence of experience and learning. Weber had an ability to make series of numbers tell quite a story, and his manipulation of the original data were ingenious, and his conclusions were equally qualified. For example, he discovered a pattern in the weekly output curve that consisted of a slow start on Mondays followed by a rise of a maximum output on Wednesdays, then a slackening on Thursday, back almost to the Tuesday level, followed by a slower rise until Saturday. But since his pattern was derived from the aggregate data of several weeks, he examined each work week of each weaver separately to determine the day of the week when maximum performance occurred, then computed the percent of maximum performances that occurred on each day. Again, Monday showed the lowest percent, Wednesday the highest. But Weber was still not satisfied: he examined each separate output curve again and for each day, counted the number of times production had either increased or decreased with respect to the preceding day, then compared the days of the week on this measure. These results and an earlier examination of the frequency of accidents by days of the week led him to the tentative hypothesis, that for weaving at least, a pattern of output did exist and might be explained in terms of fatigue and recovery, except for the low Monday output which reflected the influence of alcohol consumption on Sundays. Even so Weber wrote there might exist several such typical patterns, depending upon other characteristics of the workers, such as family origin or other circumstances such as the type of work performed. (17, p. 119)
averages." (45, p. 136) Measures of central tendency are meaningful to Weber only if they differentiate between the different categories of workers, occupations or among other variables involved. Weber suggests that where such differences are apparent, the categories or occupations would then have to be examined individually. In concluding this pilot study, Weber stated that the final question would be to assess the total impact of hereditary versus psychological and sociological factors on occupational efficiency and productivity. He maintains that the scope of his study, the number of cases and variables involved, not to speak "... of the great findings of these surveys that have been made. No definite results so far have been accomplished... the most important point is- to prove that the data which was used here... will in time, and it will be a rather long period of time, yield valuable and definite results with high probability." (45, p. 426)

Research proposals for empirical sociology

In 1910 Weber addressed the German Sociological Association, and proposed three empirical investigations, which seem to the writer as interesting as the performed studies actually conducted. He projected studies on the news media, voluntary organizations and elite professions in Germany.
He called his newspaper-proposal "Sociology of the News Media." Weber wanted to determine the degree to which newspapers are influenced by the existing social structure in general and by specific interest groups. In the research he hoped to examine the content of the newspaper in relation to public opinion. Among the many topics, he hoped to investigate in his research was the content of newspapers and its relation to public opinion; the financial and political control and affiliation of the news media as a separate capitalistic enterprise; the dependence of the readers on newspapers as a source of their opinions, the social background and other characteristics of the journalists; the role of journalists: How would you explain the fact that editorials in Germany are anonymous while in the United States they are signed by well known personalities, or persons who became known by signing editorials?" (45, p. 375)

Concerning methodological procedures of the study, Weber explained:

We will have to start with measuring the pedestrian way with the scissors and the compass, how the contents of the newspaper has quantitatively shifted in the course of the last generation between light literature and editorials, between editorials and news, [to point out] what is no longer put into the paper as news... and from these quantitative investigations we will have to move to qualitative ones. We will have to pursue the style of the presentation of the papers, how the same problems are treated inside and outside the papers, the apparent repression of emotional presentation... (45, p. 44)
Weber's second proposal centers around the Vereinswesen-voluntary organizations. He illustrated his idea by explaining the role of voluntary organizations in American culture and asked for an empirical investigation of the German comparison. He mentioned especially: prestige and mobility associated with membership in certain private organizations, Socialization process in voluntary organizations, leadership characteristics, ideals and goals and their effect upon the members, role of voluntary organizations for culture, and finally a typological classification of voluntaristic organizations on the basis of their empirically verified characteristics.

Max Weber planned to carry out a third survey with quantitative methods: an investigation of the German elite. He did not, however, elaborate this proposal in content or procedure. Indications are that he intended an analysis of people in leading professions and recruitment to and mobility within these professions.

**Description of the rural worker study**

The first empirical investigations Weber engaged in were his analyses on the situation of the rural workers in Prussia, as mentioned above. The second study, whose questionnaire was sent to 15,000 pastors, contained more than 100 questions to be
answered. This proves his intensive knowledge of the problem, since there are few questions on rural workers, that can be thought of which are not included in Weber's questionnaire. However, Weber did not advise the pastors how to answer the variety of questions on an empirically verifiable basis. The writer assumes that Weber regarded those questionnaires not in the same meaning as it is thought of in contemporary sociology. He firmly insisted that "many questions are too many questions" which means he could not possibly consider the results of his 100 question interviews as methodologically relevant. Weber used and thought of them apparently as what contemporary sociology calls pretests. Some of his questions are listed below. The first ten questions deal with the general background and environment, the specific ecological characteristics of the area and the structure of the rural community (for example: size of farm, number of employees, etc.). The next part of the questionnaire is concerned with the situation of the rural workers.

1) Their economic position; property, what kind and how much.
2) The housing conditions, number of rooms, kind of furniture, whether children are placed into bedrooms according to their sex; rent.
3) The source of their wood supply; method of its procurement; legal sale or community distribution of theft?
4) Source of good purchases, size of stores, kind of goods; interest rates (source: public, private?).
5) Living conditions of 'average' income family; cost of living in relation to income; what are the cost of potatoes, milk, bread, butter, ham, meat?
Do workers prefer to cook in their own home? Do they eat at working places? What do their daily meals look like? Do they drink coffee, how much, how many? Who drinks and in what extent are alcoholic beverages sold at what places? Do women drink, or children? Did the tax increase on brandy last year have a decisive influence on the amount which is consumed by the workers?

6) Rate and attitudes towards unemployment.
7) Working and leisure time; amount of work by season of the year, number of hours worked by women and children, workers, use of leisure time (club activities, religion, family restaurants?)
8) Changes in the wage system through industrialization.
9) Welfare and medical care of the workers.
10) The public welfare system (housing, meals, minimum wages, clothing).

The next parts of the questionnaire deal with family life, sex and marital attitudes, education, generation gap and finally income and ethical conditions underlying the situation of the rural workers.

When Weber sent out this questionnaire, it was aimed not only to obtain information on the working conditions, but, also to make the pastors by investigating them, interested in the social problems of their community and to raise the degree of their involvement in it. It was an attempt by the Social Congress of the Protestant Church of Germany to bridge the gap between the upper-class oriented pastors and the alienated workers. This aim has to be pointed out to evaluate both the research project and Weber's involvement in it.

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Conclusions

This part of the chapter illustrated a forgotten fact of Max Weber's work, in particular of his methodology. As said before, this presents only a partial view of Max Weber's empirical activities, "hopefully an historical sociologist will take up a broader interpretation" (54, p. 118) and analysis as to how relevant Weber's empirical writings are to contemporary research methods.

Max Weber's proposed or actually performed investigations analyzed individuals in their role to institutions (industrial worker's output); it analyzed individuals as subgroups (the German elite) and individuals as a group (rural workers). Most of his investigations are dynamic studies, since Weber was interested in the time factor as relevant for change (psychophysics of industrial labor); some of his studies were intended as controlled investigations—he advised his researchers to collect first the existing data (management records) before going to interview the workers in order to have a minimum control of their responses—other studies such as the rural worker research are uncontrolled. Max Weber used or proposed to use data, collected by the researcher (through interview and observation: industrial labor studies) and already existing records. In other words, he proposed a combined method of interviewing, observation and analyses of available data, as far as they may be relevant for his
research. He operationally distinguished between the variables to be used in research and outlined three levels of interpretation (variables as object to interpretation, explanation and verstehen).

Weber emphasized his priority of analyzing "individual cases, which are highly accurate and precise . . . " as opposed to aggregate data. It was demonstrated how he computed and manipulated his data.

His proposals (newspapers, voluntary organization) were made on the basis of cultural comparison. Weber strongly emphasized numerous times the urgent need for cross-cultural comparison for empirical sociological analysis.

Most interesting to the writer, however, seems to be his emphasis of relating quantitative and qualitative explanations of typologies and verstehen. In all his empirical investigations the main idea was: "And from these quantitative investigations we will have to move to qualitative ones." (45, p. 441)

Larzersfeld believes that Weber’s "thinking of the construction of empirical typologies was quite modern . . . and quotes Weber:

Only after the material has been quantitatively exploited and various parts of it brought into relationship with each other only then may one try to use this foundation as a basis for constructing types of proletarian mentality and awareness, formal as well as substantive types, . . . at any rate one must approach this problem on the basis of
numbers, that is to say, investigate differences in the frequency of certain styles of expression and of thought orientation by age, income and place of origin of the respondents. Dubious cases should be excluded, while the indisputable ones if that seems possible, should be brought together carefully into types (and also combination of types and transitional types), all this, however, very carefully and with constant reexamination of the original data. (54, p. 191)

This description of type-constructing corresponds with the formation of the ideal-type, as described in the first part of this chapter. The probabilistic approach, the numerical basis ("average") and the exclusion of dubious cases (Richtigkeit) constitute an application of Weber's ideal-type as derived from his types of social action.

However, it has been Weber's aim to combine the verstehen approach with the interpretation of his findings. Not only his planned newspaper study, which was oriented towards the understanding of the role of the news-media (he uses the phrase "sociology of the news media") but also his occupational study, which was aimed towards a classification of the working classes on the basis of the industrial apparatus and in so far . . . as an indication for the role of industry in the great changes of the orientation of humanity in the present and for the future." (45, p. 46)

This verstehen emphasis illustrates why Weber often underlined the preliminary character of his studies: "Many more studies have to be performed, before anything meaningful [in qualitative terms] can be said." In the second chapter the question
has been raised, to what degree his political and economic beliefs interrelate with his value-free verstehen approach.

His empirical studies provide some information on this problem. For example, in the occupational study he makes clear in the methodological introduction, that this study is purely scientific and cannot be used as an argument for social policy or even social reform. He himself however indicates to his fellow interviewers that employers should find the research helpful for practical use, and the indication of this should make them willing to cooperate providing the data. In addition he uses the results of his industrial labor study implicitly to justify (in a political speech to high-ranking officers of the Imperial Austrian-Hungarian Army) conservative restrictive labor policy. What verstehen may mean in his empirical studies is indicated by himself, in the study of the rural workers: This "problem with the conditions of the rural workers lies predominantly in the subjective area."

The question is not how high the income of the workers really is, but whether, as a result of (the level of wages) an orderly economy is possible for the workers, whether he and his employer are satisfied according to their own subjective evaluation, or why they are not, what directions their wishes and aspirations are taking, for future development will depend upon these factors. (42, p. 5)

How does Weber justify this direction of scientific interest? Does
his logic of scientific discovery eliminate this ideological basis?

The next chapter will discuss this question in the development of a new perspective of Weber's methodology.
CHAPTER IV

TOWARDS A NEW INTERPRETATION OF WEBER'S METHODOLOGY

It is the objective of this thesis: 1) to support the contention that Weber's methodological essays have to be analyzed from two main perspectives, one philosophical-theoretical and the other empirical; 2) to show that parts of his theoretical philosophic orientation and all of his empirical studies have been neglected in contemporary sociological interpretations of his methodology; and 3) to propose a new perspective from which Max Weber's methodology can be viewed.

In the last chapter we described his quantitatively oriented theoretical and empirical procedures. It was established that Weber actually applied quantitative approaches in his sociological analysis and that he used and emphasized quantitative empirical typologies in these studies. His explanations "moved" from quantitative analyses to qualitative ones. His theoretically oriented description of the categories of verstehen sociology can be related to this relationship. His verstehen sociology means a) the verstehen of qualitative relations in terms of meanings based on statistical probabilities, and b) the verstehen of quantitative
relations in terms of their qualitative methodological implications.
The first type of verstehen refers to the combination of his
category of adequate causation, probability and meaning; the second
type of verstehen views the phenomenon to be explained within
the limitations of its explanatory framework. These two aspects
have to be included in the understanding of Weber's methodology.

Limitations of Contemporary Interpretations
of Weber

The articles of Max Weber related to methodology range
from implications of theories of knowledge on concept formation
and explanations to probabilistic concept formation, empirical
verifications and their applications in empirical research.

Most of his interpreters overlooked the second aspect.
Von Schelting interpreted Weber within the limits of the concept
of Wissenschaftslehre—the title of Weber's methodological
writings, which were added to by Marianne Weber for the post
mortem edition—and with special regard to the relationalistic
theory of knowledge of Mannheim. Von Schelting's orientation is
primarily epistemological and emphasizes Weber's sociology of
knowledge. Parsons interpreted Weber mainly from the same
perspective. His own theory of action, however, provoked a more
sociological interpretation of Weber's methodology which became
highly influential in regard to the action concept. The later interpretations of Parsons mention Weber in regard to Parsons' own functional theory. Weber himself underlined both the relevance of functional analysis and its limitations. Howard Becker's interest in historical analyses largely limited his interpretations of Weber's methodology to the ideal-type while Freund clearly misread Weber's intentions concerning quantitative investigations ("He poked fun at those . . . "). This appears to the writer as 'sheer nonsense' considering the ideas of Weber as described in Chapter III. Specifically, Weber wrote: "Direct and unambiguous intelligibility is rational understanding (verstehen) of the highest order especially in mathematically and logically related propositions . . . " (40, p. 30)

The empirical nature of Weber's typologies reported in Chapter III appears as self-evident. To interpret Weber's ideal-type in quantitative terms was hardly necessary since, as we have shown in Chapter III, Weber himself constructed sociological types which he intended to be empirically quantified. McKinney recognized that " . . . both enumeration and measurement are implicit in such a formulation . . . " (13, p. 50), and " . . . in

\[ \text{\textsuperscript{1} McKinney's view is modest to the point of distortion as seen in Chapter III where material shows that} \ \text{\textit{both}} \ \text{\textit{enumeration and measurement are explicit in Weber's formulation.}} \]

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his utilisation and explication of the ideal-type he [Weber] was a radical pragmatist . . ." (13, p. 96).

Another author, who interpreted Weber to the American public several years before Becker and Parsons, viewed Weber's sociology, not just his ideal-type, as empirical. In 1929 Theodore Abel presented the most adequate description of Weber's methodology available even in contemporary sociology. Abel wrote:

Weber is practically alone [in German sociology] in his insistence on the application of the statistical method in sociological investigation. His postulate of understanding . . . he combines with the statistical method . . . (1, p. 133).

Weber had a great amount of respect for the statistical method and throughout his writings the influence of his statistical readings, particularly of von Kries and L. von Bortkievitch is evident. But he realized the limitations of the statistical method in sociological investigations and therefore attempted to devise other means which would supplement it. All these attempts, however, are built around the general theory of probability and thus far the fundamental proposition of the statistical method remains dominant . . . Weber accepts the theory of an all-permeating quantitative aspect of reality. He has stated that 'all qualitative differences can be expressed, in the last analysis, in some form of quantitative difference of the way in which elements appear in various combinations' (Mischungsverhältnisse) (1, p. 138).

The procedure of causal explanation proposed by Weber is in lieu of the experimental and statistical methods wherever they are inapplicable. It can be seen, however, that the principles which it follows are the same as those upon which the statistical method is based. (1, p. 143)

In short, Abel's interpretation of Weber's methodology states that

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1All italics are the writer's.
Weber proposed the use of statistics because of the possibility of expressing "all qualitative differences as quantitative differences . . . " an assumption, which led Weber to the formation of a "general theory of probability." This aspect of the description of Weber's methodology differs fundamentally from those described in Chapter II. Parsons, von Schelting, and Becker remained in the realm of qualitative explanations and the interpretations of Freund, Hempel, Pierce and Munch implied the same.

Abel's interpretation remained on the bookshelves of the various libraries; his description of the role of the statistical method in Weber's methodology never became a part of the intellectual portrait of Max Weber in contemporary sociology. However, in my view, Abel overlooked two facets of Weber's methodology. One is Weber's application of the statistical method in sociological investigation and Weber's distinction between methodological procedures to be used in historical research and those to be used in sociological research. The latter should help us to understand not only the limitation of Abel's interpretation but also the qualitative interpretations of the writer's reviewed in Chapter II.

Abel never mentioned Weber's empirical research nor his proposed research techniques. The reader of his book understands Weber only as a theoretician, as the originator of the ideal-type,
the Protestant Ethic, etc. The research proposed or performed by Weber are, however, the most important of his writings, in order to interpret his methodology as built "around the general theory of probability." Abel did not attempt to illustrate Weber's concern with sociological investigations. Forty-five years later, this was done by Oberschall, who reported:

In 1909 Weber had refused to join the newly founded Heidelberg Academy of Sciences because its charter put too much emphasis on historical research to the neglect of social research. "How much more fruitful it would be," wrote Weber, "if a modern academy supported badly needed investigations that throw light on contemporary issues, rather than commit itself in favor of historical and philosophical studies which a single individual can perform so easily by himself anyway." "Something will only be accomplished if the academy were first of all willing to support continuously and with large sums great collective undertakings, especially the surveys themselves and in the economic disciplines also the numerical computations based on the survey material or in the figures already assembled in official statistical publications . . . and secondly, if the academy provided systematically sums of money earmarked to promising young men, after completion of their formal schooling, for voyages abroad, in order to make systematic inquiries under the direct supervision of the active representatives of their discipline. For the actual functioning of legal institutions and the constitution as well as the social foundations upon which the political, economic, and cultural development of nations rest, could be studied fruitfully only in this manner." (17, p. 192)

According to Oberschall this means that:

[Weber] . . . had no less than a social research institute in mind complete with computational facilities, and a postgraduate system of fellowships for foreign travel and area studies. This is after all, not very different from the institutional support which makes systematic research possible today in the United States. (17, p. 143)
This, together with his actual sociological interpretations, illustrates very clearly that he was oriented toward empirical research. It documents his insistence upon the application of the statistical method—as described in Chapter III—in sociological investigations in general, and it shows Weber's interest in quantitative cultural comparative studies. Would Abel's book have had a different reception in contemporary sociology if this would have been mentioned? It is my opinion that the direction of interpretation of Weber might have been different, if Abel described this aspect of Weber's writings in 1929.

The second facet which is overlooked by Abel—but also by the other interpreters of Weber—is Abel's failure to distinguish between methodological procedure in history and sociology. Thus he explains that Weber's statements on causal explanation of social phenomena arose out of a dispute with E. Meyer about the methods to be followed in the explanation of historical events. They apply however also to sociology, since they present the same methods which Weber utilized in his sociological investigation. (1, p. 140)

He illustrates Weber's procedure with the following example:

It is claimed that the battle of Marathon was a determining factor in the development of Hellenistic culture. Weber, following Mayer's attempt to prove this, shows that at the time of battle there were two possibilities of development implicit in the situation in Greece: A theocratic religious culture . . . and a Hellenistic culture. The battle of Marathon checked the first possibility of development . . .
since a Persian victory, judging from the affect which it produced in other countries, would have led to the probable result that under the aegis of a Persian protectorate the theocratic element in Greece would have become dominant. (1, p. 142)

He follows Weber's conclusion, that the battle of Marathon therefore can be accounted for as a determining factor of the development of the Hellenian culture. Thus, "Weber's method is a mental process of abstraction, isolation and generalisation . . ." (1, p. 144) according to Abel. This is reminiscent of the description of the analysis of von Schelting's logical steps, which are involved in Weber's causal analysis, and more generally, this is in the main line of argument of his interpreters as described in the first part of Chapter II. In spite of this, Abel's interpretation remains as a most fruitful one because of its emphasis on Weber's notion of probability and the relevance with which Abel regarded quantitative explanations.

Another aspect of Abel's description should be mentioned: Abel translated the term "soziales Handeln" as "social behavior" (not social action); this translation is in my opinion more adequate than the action term, since it covers both types of human behavior, the intentional actions, which Weber used to define his concepts of Gemeinschafts- or Gesellschafts-action; but the term can also be used to describe Weber's investigation on the behavior of the workers in factories and rural areas. The behavior concept is
broader and more flexible than the action term. Parsons' translation of "action," which has become common for contemporary sociology in viewing Weber's terminology confines attention only to one part of Weber's writings. It fails to reflect Weber's sociological investigations and his notion that the borderline between meaningful oriented action and unintentional behavior is empirically fluid. The Abel translation is therefore more adequate, since the term behavior includes both meaningful and unintentional behavior while the term action refers only to the first category of human conduct. These two facets of Abel's interpretation, his probabilistic and his behavioral view of Weber's methodology coincide with the description of Weber's methodology as it is presented in Chapter III in this thesis. His notion, however, that Weber's methodology in sociology and history is identical--that there are not two separate procedures--contrasts with the interpretation of Weber's Verstehen sociology; presented in Chapter III. However, most of contemporary interpretations of Weber fail to make a distinction among the procedures of the two disciplines (von Schelting, Parsons, Freund, Nagel, Becket, etc.). This is the main reason for the existing confusion about the empirical verification of his verstehen interpretations (Munch, Pierce) and on the relation between ideal-type and reality (Vetter, Hempel); the lack of this
distinction—and the neglecting of his empirical investigation—explain the emphasis on the qualitative character of Weber's sociology (Freund, Honigsheim).

Methodology in History and Sociology

Max Weber's ideas concerning methodology in history and sociology, his procedures concerning research techniques, and his views on sociology of knowledge are often interrelated in his writings; he never consciously separated the questions which relate to each of these categories. The separation is mandatory, however, for those who intend to understand or even apply his methodological ideas in one of the areas mentioned above. This division can be justified by the title and content of Weber's writings. In those writings which are considered in this thesis as related to history, Weber is concerned with the application of the

1 These are mainly the articles on Roscher and Knies, his articles on Stammler and his analysis of Meyer. The content of the Meyer article is described above. His critique of Stammler's historical method Weber elaborates the ideology, which led Stammler to his ideas and which therefore has an impact on his historical theory. Stammler is considered by Weber as a late apostle of German idealism. His article on Roscher and Knies discusses mainly Roscher's historical method, and analyzes Knies' book; which is an analysis of the political economy from the perspective of the historical method. This article does not directly refer to methodological problems of sociology, it discusses questions like freedom and determination and epistemological implications of contemporary historians. The verstehen concept appears

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comparative method, as it was described by von Schelting in Chapter II. Weber's main task in using the comparative method was to find explanations which are objectively possible and to state them in terms of general laws or propositions of specific individual historical phenomena. His main ideas are contained in his articles on Roscher and Knies and on Meyer's methodology in history, in which he also explains his own procedure.

According to Weber, the historian first must select from an indefinite number of causal explanations the ones which are most consistent with his own causal interest:

When it is said that history seeks to understand the concrete reality of an 'event' in its individuality causally, what is obviously not meant by this, as we have seen, is that it is to reproduce and explain causally the concrete reality of an event in the totality of its individual qualities. To do the latter would not be actually impossible it would also be a task which is meaningless in principle. Rather, history is exclusively concerned with the causal explanation of those elements and aspects of the events in question which are of general significance and hence of historical interest from general standpoints . . . (3, pp. 169, 170)

Secondly, Weber suggests that the historian combines those elements of interest to him into the ideal-type, which he viewed together with historical interpreters; only one sociologist is mentioned by Weber: Simmel and his philosophy of history. The beginnings of Wundts psychological analyses are mentioned, the article concludes with a statement on Roscher's epistemology and Knies' "Weltanschauung" in relation to their historical works.
as a heuristic model, as it was described in Chapters I and II.

He wrote:

... the attribution of effects to causes ... [takes] ... place through a process of thought which includes a series of abstractions. The first and decisive one occurs when we conceive of one or a few of the actual causal components as modified in a certain direction and then ask ourselves whether under the conditions which have been thus changed, the same effect (same i.e. in essential points) or some other effect 'would be expected.' (3, p. 171)

Max Weber constructed an illustration of such an adequate historical causation:

Let us assume a temperamental young mother who is tired of certain misdeeds of her little child ... gives it a solid cuff. Let us further assume that she is sufficiently 'sicklied' with the pale cast of thought to give a few moments of reflection after the deeds had been done to the question of the 'pedagogical' utility of the justice of the cuff or at least of the considerable expenditure of energy involved in the action. Or still better, let us assume that the howls of the child release in the paterfamilias, who as a German, is convinced of his superior understanding of everything including the rearing of children the need to remonstrate with her on teleological grounds. Then she will, for example, expound the thought and offer it as an excuse that if at that moment she had not been, let us assume, agitated by the quarrel with the cook, that the before mentioned disciplinary procedure would not have been used at all or would not have been applied 'in that way'; she will be inclined to admit to him: 'he really knows that she is not ordinarily in that state.' She refers him thereby to his empirical knowledge regarding her usual motives, which in the vast majority of all the general possible constellations would have led to another, less irrational effect. She claims in other words, that the blow which she delivered was an accident and not an adequately caused reaction to the behavior of her child; this domestic dialogue has thus sufficed to turn the experience in question into a categorically formed object. Even
though, exactly like Molière's philistine who learned to his pleasant surprise that he has been speaking 'prose' all his life, the young woman would certainly be astonished if a logician showed her that she had made a causal 'imputation' just like an historian, that to this end, she had made 'judgements of objective possibility' and had operated with the category of 'adequate causation.' (31, pp. 177, 178)

All this means that in history the causal attribution is made by mental experiments, by qualitative calculations in terms of meaning, which in the historical studies center in Weber's historical analysis. An appraisal of the cultural meaning of an historical event is fundamental: "Without this appraisal there would in truth be no reason why we should not rate that decisive contest [between the Greeks and the Persians, f. ex.] equally with a scuffle between two tribes of Kaffirs or Indians." (31, p. 172)

Historical analysis refers to individual phenomenon in its cultural meaning, this means, according to Weber, that statistical methods are not relevant for historical explanations:

... it is clear that... objective probability determined from general empirical propositions or from empirical

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1 In his sociological investigations however, his emphasis on cultural meaning is less enthusiastic. In the industrial studies he recognized that an interpretation of the findings in terms of cultural significance is not possible. E. Francis pointed out that as soon as Weber turned towards sociology, he gave up the term cultural meaning (47, p. 99). Francis also emphasized that Weber's methodology has to be viewed according to the changing interests of his (47, p. 109).
frequencies has its analogues in the sphere of all concrete causality, including the historical. The only difference is that precisely here in the sphere of concrete causality that ability to assign a numerical measure of change is wholly lacking since this presupposes the existence of "absolute probabilities" or certain measurable or countable aspects of phenomena or results as the sole object of scientific interest. (31, p. 183)

The reason why statistical measurements cannot be employed in historical investigations is the lack of objective probability in historical information:

... what would have happened if a certain conditioning factor had been conceived of or modified in a certain way—this question... is often not answerable with any degree of probability by the use of general empirical rules even where the ideal completeness of the source material exists. However, that ideal completeness of the source material is not unconditionally required. The assessment of the causal significance of a historical fact will begin with the posing of the following question: in the event of the exclusion of the fact from the complex of factors its modification in a certain direction, could the course of events, in accordance with general empirical rules, have taken a direction in any way different in any features which would be decisive for our interest? (31, p. 180)

It should be apparent to the reader that Weber's historical method is clearly different from his methodology in sociology as presented in Chapter III. The causal explanation in history is individual and culturally meaningful. Historical logic relates to the category of "objective possibility" and explains the origins of a unique, unrepeateable event. Weber never mentioned that his procedures in history or sociology are identical. He insisted
in his articles on the verstehen sociology on the use of probability in concept formation and causal explanation. His sociological verstehen rests on a quantitatively verified probabilistic relationship of empirical types of behavior, his historical verstehen requires that the cultural meaning of a unique event to be based on qualitatively assessed possibilities.

The term "probability" appeared rarely in the historical articles--Weber uses it in a negative way, to point out the lack of probability in historical explanations--while the term possibility rarely appears in the verstehen article. The impact of this fact becomes clear in the figures below, where the two kinds of articles are compared on the basis of the concepts discussed in Chapter II and above.

Most of Weber's interpreters neglected the verstehen article--not to speak of Weber's empirical investigations--in discussing his methodology. This neglect led to the philosophical-theoretical interpretation of his methodology; it consequently led to the lack of distinction between Weber's historical and his sociological method. Although Weber's methodological writings emphasize different viewpoints, such as verstehen, objectivity, value-judgments, probability and possibility, his treatise of these viewpoints centers either around history or sociology.¹

¹It might be held that Weber's terminology is unique in so
Weber's investigations in social history combine elements of both methodologies he used the historical method of investigating in his sociology of religion. However, in this work he insists "that far as he created new concepts in each of his methodological articles, and that therefore, those articles are not comparable on a conceptual basis. In our figure, however, we used only concepts whose contents were previously described (probability, validity, proportion, possibility), and concepts which are self-explanatory in the Weberian writings (sociology and history)."
all qualitative differences can be expressed, . . . in some form of quantitative difference . . . " (33, p. 265). Social history constitutes the marginal case in Weber's investigations, because it requires sociological explanations with unique historical data. In purely historical investigations Weber refused to use quantitative measurements, this does not mean, however, that Weber insisted on the same method in purely sociological investigations. In these, he used empirical types and put emphasis in favor of probabilistic statements about aggregates of individuals rather than explaining unique individual meaningful actions or the cultural significance of his findings. As said before, Weber recognized that an interpretation in statements of cultural significance was not a possible outcome of his sociological investigations at that stage of knowledge. Accordingly he dismissed the meaningful interpretation for the time being.

Conclusion

The previous chapters were concluded with several problems to be approached. Two of these were:

1) To what degree can Max Weber's methodology be labeled as quantitative?

2) How does this quantitative aspect of Weber's methodology relate to the qualitative aspect as described in Chapter II?
These two questions can be answered now:

MAX WEBER'S METHODOLOGY IS QUANTITATIVE TO THE DEGREE THAT HE IS CONCERNED WITH SOCIOLOGICAL INVESTIGATIONS. IT IS QUALITATIVE TO THE EXTENT THAT HE IS INVOLVED IN HISTORICAL INVESTIGATIONS.

Weber's theoretical writings related to methodology explain both his historical and sociological method to the extent that Weber intended to write them either for historical or sociological purposes. Those related to sociology combine quantitative explanations with the verstehen approach. In his empirical sociological investigations, however, he dismissed the possibility of a verstehen interpretation (Chapter III) partly because he considered his analysis as a pilot study, partly because he considered only an extremely high probability as sufficient for causal explanation (Chapter III). The verstehen concept remains, however, even in his empirical studies, the basic postulate for an ultimate understanding. Its application to the causal analysis of quantitative data Weber delayed because of his rigid concern for the highest degree of probability and for the objective validation of the findings. He wrote: "The most validated type (Richtigkeitstypus) . . . [constitutes] . . . the most meaningful causal connection and is therefore the most adequate verstehen type." (44, p. 434)
Weber's Philosophy and Methodology

Two more questions remain to be considered. What are the cultural, economic and political effects of Weber's valuefree procedures in his methodology? What is the relation between causality, probability, verstehen and empirical reality in Weber's methodology? Weber dealt with these issues mainly in his articles on objectivity and value-judgments in the social sciences. Some ideas can be found in the article on the logic in cultural sciences and in the article on the verstehen sociology and methodology in sociology. Weber's methodology encountered two kinds of criticisms in the epistemological realm. Some of his critics held that his value-free methodology ultimately leads towards an "objective" reality concept which is a completely rationalized and verified one but does not reflect the normative cultural beliefs of the social scientist through his procedures and results (Horkheimer, Habermas and L. Strauss). Other interpreters held that his verstehen methodology is rather subjective since it "involves the imputation of motives for social action" (Pierce, Nagel). In the following pages, we will describe the subjective-objective dualism in Weber's methodology with special reference to the relevance of Weber's view in the discussion of contemporary philosophy of science on these issues.
Habermas said (Chapter II) that "Weber's intellectual interests are directed towards an explication of the meaning of social processes," (24, p. 75) that Weber's topic selections influence theory construction in an evaluative way and that therefore methodological decisions have to be viewed together with the interpretation of the results. More specifically Habermas assumes that Weber's enthusiasm for the combination of an effective bureaucratic system and a charismatic leader in interaction with his value-free state, anticipated the events of 1933 and thereafter.

Leo Strauss holds a very similar view:

I contend that Weber's thesis necessarily leads to Nihilism or to the view that every preference however evil, base or insane, has to be judged before the tribunal of reason, to be as legitimate as any other preference . . . to see that more clearly . . . we have to follow his thought step by step. In following this movement to its end we shall inevitably reach the point beyond which the scene is darkened by the shadow of Hitler. (24, p. 42)

The two authors overlooked, however, Weber's concept of verstehen as a methodological device, and, as we will show later, failed to recognize the basis of Weber's value-free postulate, his view of Wirklichkeits Wissenschaft (empirical science). The verstehen provides the evaluating interpretation and the "value-
free" explanatory framework and therefore constitutes the necessary balance to an empirical explanation derived from purely rational investigations. Additionally, Weber's concept of reality proves to be the key concept for an explanation of his position on value-judgments.

The type of social science in which we are interested is an empirical science (Wirklichkeitswissenschaft). Our aim is the understanding of the characteristic uniqueness of the reality in which we move. We wish to understand on one hand the relationships and the cultural significance of the individual events in their contemporary manifestations and on the other the causes of their being historically so and not otherwise. Now, as soon as we attempt to reflect about the way in which life confronts us in immediate concrete situations, it presents an infinite multiplicity of successively and coexistently emerging and disappearing events both within and outside ourselves. The absolute infinitude of this multiplicity is seen to remain undiminished even when our attention is focused on the single object, for instance a concrete act of exchange, as soon as we seriously attempt an exhaustive description of all the individual components of this individual phenomenon to say nothing of explaining it causally. All the analysis of the infinite reality which the finite human mind can conduct, rests on the tacit assumption that only a finite portion of this reality constitutes the object of scientific investigation and that only it is important in the sense of being of "worthy being known." (31, p. 72

Strauss realized, in contradiction to Habermas, the relation of Weber's concept of value-judgments to that of reality and criticized the latter:

His [Weber's] methodological thesis remain unintelligible or at any rate irrelevant, if one does not translate them into theses regarding reality... According to him, reality is an infinite and meaningless sequence, or a
chaos, of unique and infinitely divisible events which in themselves are meaningless . . . All meaning, all articulation, origination in the activity of the knowing or evaluating subject. Very few people today will be satisfied with this view of reality, which Weber had taken over from neo-Kantianism and which he modified merely by adding one or two emotional touches. (24, p. 77)

In the spirit of a tradition of three centuries, Weber would have rejected the suggestion that social science must be based on an analysis of social reality as it is experienced in social life or known to common sense. According to that tradition 'common sense' is a hybrid, begotten by the absolutely subjective world of the individual sensations and the truly objective world progressively discovered by science. (24, p. 78)

Although Strauss is correct in relating Weber's view of reality to his position on values, Strauss's description of Weber's reality concept is rather sarcastic and therefore onesided. It does not fully present Weber's own view, as described above and elaborated below. Weber's notion of reality reached far beyond "chaos." In the following pages, this concept will be investigated further to examine Strauss's claim, that in its subjectivity it is outdated and should be replaced by analyses of social reality. We will analyze the assertion that social reality constitutes a more objective base for general applicable explanations and investigations.

Reality, Causality and Probability

In the first part of this chapter, we maintained that Weber's methodology has to be viewed separately in relation to sociology.
and in relation to history. "Probability" determined the quantitative character of his sociological methodology and "possibility" determined the qualitative character of his historical methodology. The methodological procedures varied accordingly in the two disciplines. The logic, however, which has to be viewed separately from Weber's methodology because of its different ontological impact, encompassing these two procedures again, since, according to Weber, they both are objects of the same general principles of verification. The methodological difference between sociology and history is based on the different kinds of data with which these disciplines are concerned; historical explanations aim at the understanding of unique individual phenomena, while sociological explanations consist in probability statements about aggregates of individuals. The difference between possibility and probability in the field of logic is a matter of degree. Weber held that the degree of certainty determines if the logic of probability or possibility exists. "... the causal relevance of a factor can be assumed in regard to the points which are important for the concrete study which is underway, the judgement of objective possibility, which asserts this relevance is capable of a whole range of degrees of certainty." (31, p. 181) He clarifies this by stating: "The judgment of 'objective' possibility admits graduation of degree and one can form an idea of the logical
relationship which is involved by looking for help in principles which are applied in the analysis of the calculus of probability."

(31, pp. 181, 182) This means that the relation between possibility and probability is a gradation of degree, that is logically a high degree of possibility constitutes probability.

In his verstehen article, Weber defined his concepts in terms of probability: "It is only the existence of probability that a certain type of action will take place." (43, p. 1375) Consensus exists, when behavioral expectations to the others are probabilistic and therefore real. (44, p. 456) In Max Weber's scientific epistemology "the terms probability and reality are identical. Reality is conceptualized only in terms of probability. Probability is therefore not in causal relation to reality but constitutes reality itself; reality can only be expressed in terms of probabilities because the sum of all probabilities is "absolute and infinite" and therefore "unreal" for scientific investigation by 'finite' investigators. Weber therefore refuses to talk in terms of probabilities to achieve or understand absolute reality. This means he expresses causal relations as degrees of probability between probabilistic types (in sociology) or as degrees of probability (possibility) between unique events and probabilistic types (in history). In both cases, however, Weber understands "reality" as "probability."

This interpretation of the relation between reality, probability and
causality correlates with the interpretation of the same concepts in physical theory by the Copenhagen school.

**Excurse: Causality and Subjective Interpretation in Quantum Theory**

Robert Havemann explained the dilemma of interpreting the theory of quantum mechanics in a way which is reminiscent of the problem we encountered in discussing the interpretation of Weber's methodology and in the description of his basic outline. (6, p. 9) The main problem of the interpretation of quantum mechanics is the relation of subject and object (cause and effect in science) in the observation of natural events. The quantum theory was developed over a long period of time, but its final definition was developed by Niels Bohr, W. Heisenberg and E. Schroedinger. Quantum theory in its present form constitutes a complete, scientifically validated theory. Its origin is the discovery that energy can not be transferred in arbitrary amounts, but only in multiples of fixed units called quanta, but only in the energy quanta. These quanta obey the relation

\[ E = h \cdot \mu \]

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1 The author acknowledges the advice of Dr. Colen from the Department of Chemistry, Kalamazoo College.
In this formula the variable $\lambda$ expresses a frequency and $h$ is a natural constant, the Planck's constant. $h$ possesses the physical dimension of a momentum. Quantum theory produced the evidence that all physical products, whose dimension is a momentum possesses the Planck $h$. The standard interpretation of $h$ was arrived at through the Heisenberg uncertainty relation.

The Heisenberg uncertainty relation is based on the dual nature of the fundamental variables of mechanics. As Nagel explains:

... in certain situations some of the postulated subatomic elements (such as electrons) have properties characteristic of particles while in other situations they exhibit properties characteristic of waves... One of [the Heisenberg uncertainty]... relations is expressed by the formula

$$\Delta p \Delta q = \frac{h}{4\pi}$$

In this formula, the variables $p$ and $q$ are commonly read as the instantaneous coordinates of the momentum and position respectively, of an electron or other subatomic element,... on the other hand, $\Delta p$ is interpreted as the coefficient of dispersion... [Heisenberg's uncertainty] from the mean value of the momentum at a given instant; and similarly for $\Delta q$. The formula therefore asserts that at any given instant the product of dispersions of the momentum and position, respectively, of a subatomic particle is never less than $h/4\pi$. Accordingly, this form of the Heisenberg uncertainty relation can be construed as saying that, if one of these coordinates is measured with great precision, it is not possible to obtain a simultaneously and arbitrarily precise value for the conjugate coordinate. For example, if $q$ is vanishingly small, $p$ must be enormously large and for practical purposes "infinite." In consequence, if a measurement enables us to ascertain with great accuracy the position of an electron at a given time, no measurement can assign a precise value to the
momentum (and hence to the velocity) of the particle at that time. (16, p. 294)

In short, this facet of Heisenberg's uncertainty relation states that the two coordinates, momentum and position, cannot be determined precisely at the same time. This theory received two not entirely consistent interpretations, a deterministic one and a probabilistic one. In the following, we will examine the philosophical impact of these and the direction of scientific discovery—a problem which is directly related to Weber's methodology and its interpretations.

Two Modes of Interpretation in Natural and Social Sciences

Quantum theory and the uncertainty relation based on it, encountered two kinds of interpretations. On the one hand, A. Einstein, L. De Broglie and E. Nagel maintained that reality is indeed completely determined and that therefore, quantum theory has to be regarded as an incomplete theory. On the other hand, Heisenberg himself, Bohr and Havemann maintained that the quantum theory is as complete as any other physical theory and that therefore any scientific approach to assess reality has to be regarded as incomplete. The first kind of interpretation holds that the presently used methodological devices are not sufficient
to uncover the full reality, but, that the advancement of scientific
discovery as a result of new approaches should not be excluded.

De Broglie attempted to illustrate and approach a fuller compre-
hension of reality through the idea of "hidden parameters." The
second interpretation holds that the presently existing theories
are the only ones scientifically validated and that therefore a
reality-concept which is not based on scientific evidence is meta-
scientific or philosophical.

Albert Einstein defended the former position. He holds that
the "inside" view and a more complete conception of reality are
mandatory to the natural scientist:

But now I ask: Is there really any physicist who believes
that we never shall get any inside view of those important
alterations in the single system, in their structure and
their causal connections . . . ? To believe this is logi-
cally possible without contradiction; but it is so very
contradictory to my scientific instinct that I cannot forego
the search for a more complete conception. (4, p. 310)

A similar view is held by Ernest Nagel: He maintains that
the uncertainty in quantum theory is an effect and can be deduced
from the specific statistical measurements. He also holds that
as a consequence of these methodological difficulties

The statistical content of quantum mechanics does not
annul the deterministic non-statistical structure of other
physical laws. It also follows that conclusions concerning
human freedom and moral responsibility, when alleged
'acausal' and 'indeterministic' behavior of subatomic
processes, are built on sand. Neither the analysis of
physical theory, nor the study of the subject matter of physics, yields the conclusion that "there is no strict causal behavior anywhere." (16, p. 306)

The interpreters of a deterministic view of quantum theory proceed to do this on the basis of their scientific instinct (Einstein), or on the basis of their opposition to possible liberal interpretations concerning human freedom and moral responsibility:

Indeterminism has to be considered as a product of methodological devices: statistics (Nagel). The second kind of interpretations of the quantum theory shall be called probabilistic. According to Nagel, Heisenberg argued:

It is in principle impossible to ascertain with unlimited precision the simultaneous positions and momenta of elementary physical particles. Indeed the uncertainty relations assert, that the position and momentum of a particle at any given time are not independent of one another but are so related that a sharply delimited spatiotemporal location is incompatible with a sharply delimited velocity for the particle. The equation for quantum mechanics cannot, therefore, establish a unique correspondence between precise positions and momenta at one time and precise positions and momenta at other times. Nevertheless, quantum theory is capable of calculating the probability with which a particle has a specified momentum when it has a given position, and vice versa. (16, p. 295)

Heisenberg concluded that the uncertainty relation and quantum theory as a whole impose a limited view of reality on the natural sciences. The interpretation of the subatomic elements either as particles or as waves imply a different concept of nature, depending on the interest of the scientist. This means that the
description of natural events in the realm of quantum theory rests on the subjective orientation of the scientist. Heisenberg argues (similar to Weber):

... the scientific concepts are idealizations; they are derived from experience obtained by refined experimental tools, and are precisely defined through axioms and definitions. Only through these precise definitions is it possible to connect the concepts with a mathematical scheme and to derive mathematically the infinite variety of possible phenomena in this field. But through this process of idealization and precise definition the immediate connection with reality is lost. The concepts still correspond very closely to reality in that part of nature which had been the object of the research. But the correspondence may be lost in other parts containing other groups of phenomena. (7, p. 200)

Heisenberg holds that the concepts of scientific discovery are not real ones and that scientific reality, therefore exists in forms of tendencies and probabilities, rather than things or facts.

A similar view is held by R. Havemann, who maintains that the quantum theory permits us to talk only in terms of probabilities. He insists that "the relation between possibility and reality is not a causal one" (6, p. 99), and that "possibility and reality are a unity" (6, p. 97). The quantum theory allows a calculation of the probability of the position of the electrons within a complicated molecule, it is impossible, however, to assess the real position of the electrons at given sequences of time. (6, p. 82)
In review, the quantum theory received two kinds of interpretation of the reality concept, determinism meant a heuristic postulate (Einstein) and an explanatory means for the aim of objectivity. (Nagel: there is strict causal behavior everywhere.) Nagel's position explains his critical view of Weber's verstehen. Nagel insists on a thorough deterministic element in all aspects of scientific discovery: Nevertheless, to abandon the deterministic principle itself is to withdraw from the enterprise of science. (16, p. 606) Accordingly, he does not agree with Weber's probabilistic logic. For example, after discussing Weber's application of the "objective possibility" in the investigation of the possible events, which would have followed a Persian victory over Athens, Nagel holds that "the conclusion of this probabilistic argument is obviously not established beyond every conceivable doubt." (16, p. 590) He maintains that "the relevance of the probability calculus for evaluating the strength of evidence is doubtful and . . . widely disputed." (16, p. 591)

The part of his book which deals with determinism in history does not provide an alternative solution to the probabilistic logic of inquiry. His discussion is full of examples from the field of classical physics. (For example: "a system . . . of soda water, whiskey and ice . . ."). According to Nagel, science has to present an objective portrait of reality in the fullest sense, a
portrait in terms of causes and effects. His stress on absolute objectivity is in accordance with his rejection of the Heisenberg interpretation of the Quantum theory and with his criticism of Weber's subjective verstehen.

Verstehen, according to Nagel, implies the inference of subjective factors, which cannot be controlled in any scientific way, in causal analysis. Nagel's view is, in his own terms, however, not consistent: His rejection of the quantum theory was not—and could not have been made on the basis of scientific evidence, since even Einstein admitted, that it is impossible "... to believe this [the uncertainty relation] ... is logically possible without contradiction," that it is only "contradictionary to my scientific instinct." (4, p. 310) What is then the basis for a thorough deterministic view of all aspects of science? Einstein admitted that science does not determine a deterministic analysis. Neither natural nor social science possess a full view of empirical reality, which would justify a scientific decision, as to which kind of interpretation is "real," which means, in accordance with reality. The probabilistic interpreters interpret reality in the way they perceive it. According to Weber, a social relationship is real when it is probabilistic. According to Heisenberg, we can grasp only parts of the infinite; scientific reality is
not real. What is real are only the tendencies and possibilities. (6, p. 206) This view of reality is a wide spread one and cannot be condemned on the basis of "scientific" evidence or even objectivity. The deterministically oriented manner of interpreting scientific results, however, cannot be judged on the scientific level either. The decision of the scientist, which kind of causal analysis he pursues, is made in the realm of philosophy.

Philosophy and Methodology

The determining factor, whether the scientist prefers a deterministic or a probabilistic explanation, is his implicit or explicit conscious philosophy. "Philosophy is always in what the Greeks called aporia, that is, in a state of perplexity about the nature of being." The answer to the question of being determines the scientific endeavour.

The general philosophy of reality determines whether a scientist views scientific laws and general propositions as products of the finite human mind, and therefore, as a partial view of reality or whether he holds that the full empirical reality constitutes scientific laws through description of the deterministic cause-effect relation of observed facts and as prediction of facts which are as yet unobserved.
In the first case, scientific statements and propositions reflect empirical reality and only the form of those statements is the object of an epistemological discussion. In the second case, the epistemology - or is regarded as interrelated with the total scientific enterprise as a whole. Reality, accordingly, is constituted through the reflection of these processes.

In short: The philosophy of reality constitutes the superstructure which determines the type of scientific explanation pursued and the relation and meaning of the objectivity and subjectivity. The philosophical superstructure necessitates either a complete view of reality in terms of cause and effect or, if this necessity does not exist, this superstructure posits the relationship between cause and effect on a probabilistic one. Since necessity is not postulated forcibly, the superstructure of Max Weber's methodology is probabilistic.

The philosophical superstructure is to be distinguished from their socio-cultural substructures. The substructure determines the various interests, values and norms according to which the scientist selects and analyses. Thus, Parsons is determined through his social action philosophy, Becker's interpretation through his dogma of historical truth, Habermas and Strauss are determined through their moral philosophy. Some interpreters of Weber attempted to interpret him by his own terms.
and within his own philosophy. (That is, without reference to their philosophy.) Thus, Abel and Winckelmann put heavy emphasis on Weber's undetermined, probabilistic methodology and look for what is objective or subjective.

Weber himself recognized too, that the individual philosophical frame of reference is influential for scientific interpretations, but he strongly insisted that such evaluative ideas "can never become the foundation for the... proof of the validity of the evaluative ideas." (31, p. 111) In other words, he recognized the fact of deterministic standpoints but insisted upon using, however, the probabilistic logic and methodology because of the philosophic metaempirical being of deterministic philosophy. In addition he emphasized the constant change of the factors, which influence the scientific decision making process: (31, p. 112)

All research in the cultural sciences... once it is oriented towards a given subject matter through particular settings of problems and has established its methodological principles, will consider the analysis of the data as an end in itself. It will discontinue assessing the value of the individual facts in terms of their relationships to ultimate value-ideas. Indeed it will lose its awareness of its ultimate rootedness in the value-ideas in general. And it is well that it should be so. But there comes a moment when the atmosphere changes. The significance of the unreflectively utilized viewpoints becomes uncertain and the road is lost in the twilight. The light of the great cultural problems moves on. Then science too prepares to change its standpoint and its analytical apparatus and to view the streams of events from the heights of thought.
It follows those stars which alone are able to give meaning and direction to its labors:
"The newborn impulse fires my mind,
I hasten on, his beams eternal drinking,
The day before me and the night behind,
Above me Heaven unfurled, the floor of waves beneath me."

(Goethe, Faust, Act I, Scene II, Transl. B. Tayler)

It should be apparent that Weber's concept of science is almost identical with the scientific understanding of the Copenhagen school, and that it can not be claimed therefore, that his method lacks the specific characteristics of an empirical science. Max Weber's methodology and his logic which we described in this thesis are in basic agreement with the logical principles of quantum theory as it is perceived by the majority of contemporary physicists. In this thesis, we have limited our comparison to the probabilistic interpretation of empirical reality by both Weber and quantum theory. A much more detailed comparison can be found in Winckelmann's article on Weber's understanding of society. (65, p. 250)

Conclusion: Max Weber's Philosophy and Methodology

In the two previous chapters we concluded with several questions, two of which remain to be answered; one, what are the cultural, economic and political effects of Weber's value-free procedures in his methodology? (Chapter II) and two, what is
the relationship between causality, probability, verstehen and empirical reality in Weber's methodology?

Max Weber's empirical and theoretical writings constitute a unity insofar as they both employ a probabilistic method and logic. As detailed above, Weber's concept of reality is a probabilistic one; reality is conceptualized and expressed in terms of probability; causal equations are probabilistic calculations between probabilistic empirical types in sociology, while in the field of history, causal equations constitute the relation between unique phenomena and general types of objective possibility. The relation between probability and possibility is a matter of degree. Similar to the Havemann interpretation of quantum theory, Weber defined probability as a high degree of possibility. Both possibility and probability constitute reality in their respective disciplines.

Weber clearly recognized the impact of social and cultural values on scientific endeavor. The value relevance of all scientific undertaking was to him the only alternative to a normative science, which would exclude "the possibility that values can be analytically studied." (22, p. 98) Weber's logic and method contains however two elements which limit the effect of built-in value-judgments in history as well as sociology. One is his emphasis on the probabilistic
nature of causal explanations. Weber clearly recognized the self-defeating effect of general applicable causal explanations. His rejection of the general method of Roscher, for example, was drawn on the basis that Roscher was not aware of the normative influence of his philosophy while constructing historical laws of general character.

The probabilistic nature of Weber's logic of discovery not only permits a critical reappraisal of its applicability to reality, but the identity between reality and probability is the object of constant dialectic estimation of its prerequisites. Secondly, his verstehen, as a methodological device, finally permits an evaluation of the rationale and motives which permeated the scientific enterprise. Habermas clearly overlooked Weber's constant critical emphasis of these two devices. The probabilistic method and the subjective-critical verstehen as an analytical device from Weber's political, cultural and philosophical beliefs, which in turn effect the analysis.

The objective-subjective relationship in Weber's methodology cannot be viewed only in regard to validated causal explanations and verstehen of subjective intentions and meanings. Weber's verstehen concept provides the methodological instrument to grasp and analyze the philosophical framework which in each individual
case is interrelated with the scientific conceptualization by determining its direction of interest. This means:

MAX WEBER'S METHODOLOGY IS SUBJECTIVE TO THE EXTENT THAT SUBJECTIVE INTERESTS APPEAR AS "OBJECTIVE" AS THEY ARE COMBINED AND INTERRELATED WITH VALIDATED CAUSAL EXPLANATIONS. MAX WEBER'S METHODOLOGY IS OBJECTIVE TO THE EXTENT THAT OBJECTIVE CAUSAL EXPLANATIONS ARE "SUBJECTIVE" AS THEY ARE COMBINED AND INTERRELATED WITH PROBABILITY STATEMENTS AND ANALYTIC-SUBJECTIVE VERSTEHEN.

In this thesis, Max Weber's methodological essays have been analyzed from two main perspectives, one, philosophical-theoretical and the other empirical. These two perspectives as a special point of view were what enabled us to develop more comprehensively the dialectic of the relationship between theory and empirical concept formation which exists only in the substantive area of methodology. It leads to the methodological division between theories of unique individual empirical phenomena and theories of aggregates of individual phenomena. This is the methodological categorization of history and sociology. The

1This discussion is an attempt to answer the questions initially set forth on page 1 of Chapter I as the stated objectives of this thesis.
interpretation, which Weber's methodology received in contemporary sociology emphasizes the unity of methodological approach to these two disciplines, and therefore neglects those parts of his theoretical methodology in which he emphasizes the specific sociological categories; also it neglects Weber's empirical sociological investigations.

In the perspective purpose of this thesis the dialectic of the relationship of theory and empiricity in Weber's methodology is resolved in the field of logic. The methodological classification of science is overcome by Weber through a unified logic of procedures. The quantitative and qualitative characteristics of the two methodologies in history and sociology become a matter of degree, probability is a high degree of possibility. However, the unified probabilistic procedures in the logic of scientific discovery create a new dialectic dualism. Logic, however, constitutes an interrelated combination of methodological and philosophical elements. The relation of the philosophical and methodological elements determine necessarily the relation of objectivity and subjectivity in a scientific explanation. As seen, this relationship is a dialectic one (too). Therefore, Weber's methodology constitutes a highly dialectical construct. It must be analyzed dialectically as a result of this. It can be interpreted
as being in agreement with the probabilistic interpretation of quantum theory, since Weber, like the Copenhagen school, stressed the probabilistic character of conceptualized reality and since both approached causality from a probabilistic perspective. Finally, both Weber and the Copenhagen interpreters put emphasis on the incentive role of philosophy in determining the scientific direction and outcome. It has been shown that those interpreters who oppose Weber's probabilistic-subjective methodology and logic base their opposition not on scientific evidence but on their own philosophical determinism. It has further been shown that the subjective-objective relation is object to philosophical rather than scientific interpretation. The direction of interpretation depends on the degree to which the interpreter holds a probabilistic or a deterministic philosophy as his star "which alone [is] able to give meaning and direction to its labors." (31, p. 112)

This interpretation of Max Weber's methodology was described as a quantitative in relation to sociological investigations and as objective in relation to verstehen; the interpretation of this thesis contrasts with most interpretations of Weber's methodology in contemporary sociology. Weber is considered in relation to qualitative historical analyses and subjective meaningful verstehen. All interpretations of Weber, however, constitute concrete manifestations of the interpreters receptions of Weber's methodology;
the interpretations cannot be viewed separately from the men who made them. To neglect this point, implies the denial of the great differences among the interpretations and the assumption that any one interpretation constitutes the real one. Such a real interpretation does not exist and will not exist in the Weberian meaning of reality, since reality constitutes itself only in terms of probability. This interpretation of his methodology is, therefore, at best a highly probable one.

In content and form of the thesis it was suggested that Weber's methodology should be dialectically analyzed, not in the systematic Hegelian sense, but as a critical understanding of the philosophic-ontological links between its mostly probabilistic conceptualization of empirical reality on the one hand and adequate causation on the other. Such a critical understanding presupposes the application of verstehen as a methodological instrument.
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