

## THE LOGIC OF THE SOCIAL SCIENCES

I propose to begin my paper on the logic of the social sciences with two theses which express the contrast between our knowledge and our ignorance.

*First thesis:* We have a fair amount of knowledge. Moreover, we know not only details of doubtful intellectual interest, but also, and more especially, things that are not only of considerable practical importance, but may, in addition, provide us with deep theoretical insight, and with a surprising understanding of the world.

*Second thesis:* Our ignorance is boundless and sobering. Indeed, it is precisely this overwhelming progress of the natural sciences (to which my first thesis alludes) that continually reminds us of our ignorance, even in the field of the natural sciences themselves.

Opening lecture at the conference of the German Sociology Society in Tübingen, 1961. My lecture was first published in the *Kölner Zeitschrift für Soziologie und Sozialpsychologie*, 2, 14, 1962, pp. 233-48. My lecture was supposed to start a debate. Professor Adorno had been invited to continue this debate in his supplementary paper, in which he essentially agreed with me. However, when the book *The Positivist Dispute in German Sociology* was published, Adorno began with two polemical pieces, which together took up approximately one hundred pages; then came my lecture, followed by Adorno's supplementary paper and by others that were not given at the conference. It is most unlikely that anyone reading the book *The Positivist Dispute* would suspect that my lecture had opened the debate and that Adorno's aggressive opening hundred pages had been written much later (specifically for the book).

Translator's note: The main body of this translation makes some use of the version printed in *The Positivist Dispute in German Sociology*, the English translation by Glyn Adey and David Frisby (Heinemann, London, 1976) of *Der Positivismusstreit in der deutschen Soziologie*. However, it has been revised and amended for this edition, particularly in those places where the German deviates noticeably from the English.

This gives a new twist to the Socratic idea of ignorance. With each step forward, with every problem we solve, we not only discover new and unsolved problems, but we also discover that just when we believed that we were standing on firm and safe ground, all things are, in reality, insecure and unstable.

Of course, my two theses about knowledge and ignorance only appear to contradict one another. The chief cause of this apparent contradiction lies in the fact that the word 'knowledge' is used in a rather different sense in each of the two theses. Yet both senses are important, and so are both theses: so much so that I propose to make this explicit in the following third thesis.

*Third thesis:* Every theory of knowledge has a fundamentally important task, which may even be regarded as its crucial test: it must do justice to our first two theses by clarifying the relations between our remarkable and constantly increasing knowledge and our constantly increasing insight that in reality we know nothing.

If we give it a little thought, it goes almost without saying that the logic of knowledge must address this tension between knowledge and ignorance. An important consequence of this insight is formulated in my fourth thesis. But before I present this fourth thesis, I should like to apologize for the many theses that are still to come. My excuse is that it was suggested to me that I assemble this paper in the form of numbered theses. I found this suggestion very useful despite the fact that this style may create the impression of dogmatism. Here, then, is my fourth thesis.

*Fourth thesis:* So far as one can say at all that science or knowledge starts from something, one might say the following: Knowledge does not start from perceptions or observations or the collection of data or facts; it starts, rather, from *problems*. One might say: No knowledge without problems; but also, no problems without knowledge. But this means that knowledge starts from the tension between knowledge and ignorance: No problems without knowledge - no problems without ignorance. For every problem arises from the discovery that there is something amiss within our supposed knowledge; or, viewed logically, from the discovery of an inner contradiction in our supposed knowledge, or of a contradiction between our supposed knowledge and the facts; or, to be more accurate, from the discovery of an apparent contradiction between our supposed knowledge and the supposed facts.

While my first three theses may perhaps, because of their abstract character, create the impression that they are somewhat removed from our topic – that is, the logic of the social sciences – I should like to say that my fourth thesis brings us right to the heart of our topic. This can be formulated in my fifth thesis as follows.

*Fifth thesis:* As in all other sciences, we are in the social sciences either successful or unsuccessful, interesting or dull, fruitful or unfruitful, in exact proportion to the significance or interest of the problems we are concerned with; and also, of course, in exact proportion to the honesty, directness and simplicity with which we tackle these problems. None of this restricts us to theoretical problems. Serious practical problems, such as the problems of poverty, of illiteracy, of political suppression or of uncertainty concerning legal rights, were important starting points for research in the social sciences. Yet these practical problems led to speculation, to theorizing and thus to theoretical problems. In all cases, without exception, it is the character and the quality of the problem – and also of course the boldness and originality of the suggested solution – which determine the value, or lack of value, of the scientific achievement.

The starting point, then, is always a problem; and observation becomes something like a starting point only if it reveals a problem; or in other words, if it surprises us, if it shows us that there is something not quite right about our knowledge, about our expectations, about our theories. Thus an observation only creates a problem when it contradicts certain of our conscious or unconscious expectations. But then what constitutes the starting point of our scientific work is not so much an observation pure and simple, but rather an observation that plays a particular role; that is, an observation which creates a problem.

I have now reached the point where I can formulate my *main thesis*, as thesis number six. It consists of the following.

*Sixth thesis (main thesis):*

(a) The method of the social sciences, like that of the natural sciences, consists in trying out tentative solutions to those problems from which our investigations start.

Solutions are proposed and criticized. If a proposed solution is not open to objective criticism, then it is excluded as unscientific, although perhaps only temporarily.

(b) If the proposed solution is open to objective criticism, then we attempt to refute it; for all criticism consists in attempts at refutation.

(c) If a proposed solution is refuted through our criticism we propose another solution.

(d) If it withstands criticism, we accept it temporarily; and we accept it, above all, as worthy of further discussion and criticism.

(e) Thus the method of science is one of tentative attempts (or brain-waves) to solve our problems which are controlled by the most severe criticism. It is a critical development of the method of 'trial and error'.

(f) The so-called objectivity of science lies in the objectivity of the critical method; that is, above all, in the fact that no theory is exempt from criticism, and further, in the fact that the logical instrument of criticism – the logical contradiction – is objective.

The basic idea which lies behind my central thesis might also be put in the following way.

*Seventh thesis:* The tension between knowledge and ignorance leads to problems and to tentative solutions. Yet the tension is never overcome. For it turns out that our knowledge only ever consists in suggestions for provisional and tentative solutions. Thus the very idea of knowledge involves, in principle, the possibility that it will turn out to have been a mistake, and therefore a case of ignorance. And the only way of justifying our knowledge is itself merely provisional, for it consists in criticism or, more precisely, in an appeal to the fact that *so far* our attempted solutions appear to withstand even our most penetrating criticism.

There is no positive justification: no justification which goes beyond this. In particular, our tentative solutions cannot be shown to be probable (in any sense that satisfies the laws of the calculus of probability).

Perhaps one could describe this position as *criticist*.

In order to give a better idea of my main thesis and its significance for sociology it may be useful to contrast it with certain other theses which belong to a widely accepted methodology which has often been quite unconsciously absorbed.

There is, for instance, the misguided and erroneous methodological approach of naturalism or scientism, which urges that it is high time that the social sciences learn from the natural sciences what scientific method is. This misguided naturalism

establishes such demands as: begin with observations and measurements; this means, for instance, begin by collecting statistical data; proceed, next, by induction to generalizations and to the formation of theories. It is suggested that in this way you will approach the ideal of objectivity, so far as this is at all possible in the social sciences. In so doing, however, you ought to be conscious of the fact that objectivity in the social sciences is much more difficult to achieve (if it can be achieved at all) than in the natural sciences. For being objective demands that one is not biased by one's value judgements – that is (as Max Weber called it), to be 'value-free'. But only in the rarest cases can the social scientist free himself from the value system of his own social class and so achieve even a limited degree of 'value freedom' and 'objectivity'.

Every single one of the theses which I have here attributed to this misguided naturalism is in my opinion totally mistaken: all these theses are based on a misunderstanding of the methods of the natural sciences, and actually on a myth – a myth, unfortunately all too widely accepted and all too influential. It is the myth of the inductive character of the methods of the natural sciences, and of the character of the objectivity of the natural sciences. I propose in what follows to devote a small part of the precious time at my disposal to a critique of this misguided naturalism.

Admittedly, many social scientists will reject one or other of the theses which I have attributed to this misguided naturalism. Nevertheless this naturalism seems at present to have gained the upper hand in the social sciences, except perhaps in political economics; at least in English-speaking countries. I wish to formulate the symptoms of this victory in my eighth thesis.

*Eighth thesis:* Before the Second World War, sociology was regarded as a general theoretical social science, comparable, perhaps, with theoretical physics, and social anthropology was regarded as a sociology of very specific, that is to say, primitive societies. Today this relationship has been completely reversed; a fact to which attention should be drawn. Social anthropology or ethnology has become a general social science, and sociology has resigned itself more and more to becoming one element within social anthropology: that is, the social anthropology of a very specific form of society – of the highly industrialized Western European form of society. Restated more briefly, the relationship

between sociology and anthropology has been completely reversed. Social anthropology has been promoted from an applied specialist discipline to a fundamental science, and the anthropologist has been elevated from a modest and somewhat short-sighted *fieldworker* to a far-seeing and profound social theorist and social depth-psychologist. The former theoretical sociologist, however, must be happy to find employment as a *fieldworker* and a specialist: his function is to observe and to describe the totems and taboos of the white natives of the Western European countries and of the United States.

But this change in the fate of the social scientist should perhaps not be taken too seriously; particularly as there is no such thing as the essence of a scientific subject. This leads me to my ninth thesis.

*Ninth thesis:* A so-called scientific subject is merely a conglomerate of problems and tentative solutions, demarcated in an artificial way. What really exists are problems, and scientific traditions.

Despite this ninth thesis, the complete reversal in the relations between sociology and anthropology is extremely interesting, not on account of the subjects or their titles, but because it points to the victory of a pseudo-scientific method. Thus I come to my next thesis.

*Tenth thesis:* The victory of anthropology is the victory of an allegedly observational, allegedly descriptive method, which purports to use inductive generalizations. Above all, it is the victory of an allegedly more objective method, and thus of what is taken to be the method of the natural sciences. It is a Pyrrhic victory: another such victory and we – that is, both anthropology and sociology – are lost.

My tenth thesis may be formulated, I readily admit, a little too pointedly. I admit of course that much of interest and importance has been discovered by social anthropology, which is one of the most successful social sciences. Moreover, I readily admit that it can be a very fascinating and interesting experience for us Europeans to see ourselves, for a change, through the spectacles of the social anthropologist. But although these spectacles are perhaps more coloured than others, this hardly makes them more objective. The anthropologist is not the observer from Mars he often thinks he is, whose social role he often attempts to play (and not without gusto); nor have we the slightest reason to suppose that an

inhabitant of Mars would see us more 'objectively' than we, for instance, see ourselves.

In this context I should like to tell a story which is admittedly extreme but is in no way unique. Although it is a true story, this is immaterial in the present context: should the story seem improbable to you, please, take it as an invention, as a freely invented illustration, designed to make clear an important point by means of crass exaggeration.

Years ago, I was a participant in a four-day conference, organized by a theologian, in which philosophers, biologists, anthropologists and physicists took part – one or two representatives from each discipline; there were eight of us in all. The topic was 'Science and Humanism'. After a few teething troubles and the defeat of an attempt to impress us by sublime argument, the joint efforts of roughly four or five participants succeeded in the course of three days in raising the discussion to an uncommonly high level. Our conference had reached the stage – or so it appeared to me at least – at which we all had the happy feeling that we were learning something from one another. At any rate, we were all immersed in the subject of our debate when out of the blue the social anthropologist made his contribution.

'You will, perhaps, be surprised', he said, 'that I have said nothing so far in this conference. This is because I am an observer. As an anthropologist I came to this conference not so much in order to participate in your verbal behaviour but rather to study your verbal behaviour. That is what I have been doing. Consequently, I was not always able to follow the actual content of your discussion. But someone like myself who has studied dozens of discussion groups learns in time that the topic discussed is relatively unimportant. We anthropologists learn' – this is almost verbatim (so far as I remember) – 'to look at such social phenomena from the outside and from a more objective standpoint. What interests us is the *how*: for example, how one person or another tries to dominate the group and how his attempts are rejected by the others, either singly or through the formation of a coalition; how after various attempts of this kind a hierarchical order and hence a group equilibrium develops, along with a group ritual of verbalization; these things are always very similar no matter how varied the question appears to be which serves as the topic of the discussion.'

We listened to all that our anthropological visitor from Mars had to say; and then I put two questions to him. First, whether he had any comment to make on the actual results of our discussion; and then, whether he could not see that there were such things as impersonal reasons or arguments which could be valid or invalid. He replied that he had had to concentrate too much on the observation of our group behaviour to have been able to follow our arguments in detail; moreover, had he done so, he would have endangered (so he said) his objectivity; for he might have become involved in the argument; and had he allowed himself to be carried away by it, he would have become one of us – and that would have been the end of his objectivity. Besides, he was trained not to judge the literal content of verbal behaviour (he constantly used the terms 'verbal behaviour' and 'verbalization'), or to take it as being important. What concerned him, he said, was the social and psychological function of this verbal behaviour. And he went on: 'While argument or reasons make an impression on you, as participants in a discussion, what interests us is the fact that through such means you can mutually impress and influence each other; and especially of course the symptoms of this influence. We are concerned with concepts such as emphasis, hesitation, intervention and concession. We are never actually concerned with the factual content of the discussion but only ever with the role which the various participants are playing: with the dramatic interplay as such. As to the so-called arguments, they are of course only one aspect of verbal behaviour and no more important than any of the other aspects. The idea that one can distinguish clearly between arguments and other impressive verbalizations is a purely subjective illusion; and so is the idea of a distinction between objectively valid and objectively invalid arguments. If hard pressed, one could classify arguments according to the societies or groups within which they are, at certain times, *accepted* as valid or invalid. That the time element plays a role is also revealed by the fact that so-called arguments which are at one time accepted in a discussion group such as the present one, may nonetheless be attacked or rejected again at a later stage by one of the participants.'

I do not wish to prolong the description of this incident. I imagine that it will not be necessary to point out, in the present gathering, that the somewhat extreme position of my anthropological friend shows in its intellectual origin the influence not only of the behaviourist ideal of objectivity but also of certain

ideas which have grown in German soil. I refer to the idea of philosophical relativism: historical relativism, which holds that there is no objective truth, only truths for this or that age; and sociological relativism, which teaches that there are truths or sciences for this or that group or class, such as proletarian science and bourgeois science. I also believe that the so-called sociology of knowledge played a large part in the early history of the dogmas echoed by my anthropological friend.

Admittedly, my anthropological friend adopted a somewhat extreme position at that conference. But this position, especially if one modifies it a little, is neither untypical nor unimportant.

But this position is *absurd*. Since I have criticized historical and sociological relativism and also the sociology of knowledge in detail elsewhere, I shall not do so here. I will confine myself to a brief discussion of the naive and misguided idea of scientific objectivity which underlies this position.

*Eleventh thesis:* It is completely erroneous to assume that the objectivity of a science depends upon the objectivity of the scientist. And it is completely erroneous to believe that the attitude of the natural scientist is more objective than that of the social scientist. The natural scientist is just as partisan as anyone else, and unless he belongs to the few who are constantly producing new ideas, he is, unfortunately, often extremely biased, favouring his own ideas in a one-sided and partisan manner. Several of the most outstanding contemporary physicists have even founded schools which set up a powerful resistance to new ideas.

However, my thesis also has a positive side and this is more important. It forms the content of my twelfth thesis.

*Twelfth thesis:* What may be described as scientific objectivity is based solely upon that *critical* tradition which, despite all kinds of resistance, so often makes it possible to criticize a dominant dogma. In other words, the objectivity of science is not a matter for the individual scientist but rather the social result of mutual criticism, of the friendly-hostile division of labour among scientists, of their co-operation and also of their competition. For this reason, it depends, in part, upon a whole string of social and political circumstances which make this criticism possible.

*Thirteenth thesis:* The so-called sociology of knowledge, which sees objectivity in the behaviour of individual scientists, and which explains lack of objectivity in terms of the social habitat of the scientists, has completely missed the following decisive point:

the fact that objectivity rests solely upon criticism. What the sociology of knowledge has overlooked is none other than the sociology of knowledge itself—the theory of scientific objectivity. Objectivity can only be explained in terms of social ideas such as competition (both of individual scientists and of various schools of thought); tradition (that is, the critical tradition); social institutions (for instance, publications in various competing journals and by various competing publishers; discussions at congresses); the power of the state (that is, its political tolerance of free discussion).

Such minor details as, for instance, the social or ideological habitat of the researcher tend to be eliminated by this process in the long run; although admittedly they always play a part in the short term.

The so-called problem of 'value freedom', just like the problem of objectivity, may be solved in a much *freer* way than is usually done.

*Fourteenth thesis:* In critical discussion we may distinguish such questions as: (1) The question of the truth of an assertion; the question of its relevance, of its interest and of its significance vis-à-vis the problems in which we are interested. (2) The question of its relevance and of its interest and of its significance vis-à-vis various *extra-scientific* problems like the problem of human welfare or the quite differently structured problem of national defence or of an aggressive nationalist policy; or of industrial expansion; or of the acquisition of personal wealth.

It is clearly impossible to eliminate such extra-scientific interests from scientific research. And it is just as impossible to eliminate them from research in the natural sciences—for example from research in physics—as from research in the social sciences.

What is possible and what is important and what gives science its special character is not the elimination of extra-scientific interests but rather the distinction between the interests which do not belong to the search for truth and the purely scientific interest in truth. But although truth is the chief scientific value, it is not the only one. Relevance, interest and the significance of statements vis-à-vis a purely scientific problem situation are also scientific values of the first order; and this is also true of values like fruitfulness, explanatory power, simplicity and precision.

In other words, there exist those positive and negative values that are *purely* scientific and those that are *extra-scientific*. And

although it is impossible to separate scientific work from extra-scientific applications and evaluations, it is one of the tasks of scientific criticism and scientific discussion to fight against the confusion of value-spheres and, in particular, to eliminate extra-scientific evaluations from *questions of truth*.

This cannot, of course, be achieved once and for all, by means of a decree; rather it remains one of the enduring tasks of mutual scientific criticism. The purity of pure science is an ideal which is presumably unattainable; but it is an ideal for which we constantly fight – and should fight – by means of criticism.

In formulating this thesis I have said that it is practically impossible to banish extra-scientific values from scientific activity. The situation is similar with respect to objectivity: we cannot rob the scientist of his partisanship without also robbing him of his humanity, nor can we suppress or destroy his value judgements without destroying him as a human being *and as a scientist*. Our motives and our purely scientific ideals, like the ideal of a pure search for truth, are deeply anchored in extra-scientific and, in part, in religious value judgements. The objective and 'value-free' scientist is not the ideal scientist. Without passion we can achieve nothing – certainly not in pure science. The phrase 'the love of truth' is no mere metaphor.

It is, therefore, not just that objectivity and value freedom are unattainable in practice for the individual scientist, but rather that objectivity and 'value freedom' are themselves *values*. And since value freedom itself is a value, the demand for unconditional value freedom is paradoxical. This objection is not very important, but it should be noted that the paradox disappears quite of its own accord if we replace the demand for value freedom with the demand that it should be one of the tasks of scientific criticism to expose confusions of value and to separate purely scientific value questions of truth, relevance, simplicity and so forth from extra-scientific questions.

I have so far attempted to develop briefly the thesis that the method of science consists in the choice of problems and in the criticism of our ever tentative and provisional attempts to solve them. And I have attempted to show further, using as my examples two much discussed questions of method in the social sciences, that this critical approach to methods (as it might be called) leads to quite reasonable methodological results. But although I have said a few words about epistemology, about the

logic of knowledge, and a few critical words about the methodology of the social sciences, I have in fact thus far made only a small positive contribution to my topic, the logic of the social sciences.

I do not wish to detain you by giving reasons or excuses why I consider it important to identify scientific method, at least in first approximation, with the critical method. Instead, I should like now to move straight to some purely logical questions and theses.

*Fifteenth thesis:* The most important function of pure deductive logic is as an organon of criticism.

*Sixteenth thesis:* Deductive logic is the theory of the validity of logical inferences or of the relation of logical consequence. A necessary and crucial condition for the validity of a logical inference is the following: if the premisses of a valid inference are *true* then the conclusion must also be *true*.

This may also be expressed as follows. Deductive logic is the theory of the transmission of truth from the premisses to the conclusion.

*Seventeenth thesis:* We can say: if all the premisses are true and the inference is valid, then the conclusion *must* also be true; and if, consequently, the conclusion is false in a valid inference, then it is not possible for all the premisses to be true.

This trivial but decisively important result may also be expressed in the following manner: deductive logic is not only the theory of the *transmission of truth* from the premisses to the conclusion, but it is also, at the same time, the theory of the *retransmission of falsity* from the conclusion to at least one of the premisses.

*Eighteenth thesis:* In this way deductive logic becomes the theory of rational criticism. For all rational criticism takes the form of an attempt to show that unacceptable conclusions can be derived from the assertion we are trying to criticize. If we are successful in deriving, logically, unacceptable conclusions from an assertion, then the assertion may be taken to be refuted.

*Nineteenth thesis:* In the sciences we work with theories, that is to say, with deductive systems. There are two reasons for this. First, a theory or a deductive system is an attempt at explanation, and consequently an attempt to solve a scientific problem. Second, a theory, that is, a deductive system, can be criticized rationally through its consequences. It is thus a tentative solution, which is subject to rational criticism.

So much for formal logic as the organon of criticism.

Two fundamental concepts that I have used here require a brief elucidation: the concept of truth and the concept of explanation.

*Twentieth thesis:* The concept of truth is indispensable for the critical approach developed here. What we are criticizing is the claim that a theory is true. What we attempt to show as critics of a theory is, clearly, that this claim is unfounded: that it is false.

The important methodological idea that we can learn from our mistakes cannot be understood without the regulative idea of truth: any mistake simply consists in a failure to live up to our goal, our standard of objective truth, which is our regulative idea.

We term a proposition 'true' if it agrees with the facts or corresponds to the facts, or if things are as described by the proposition. This is what is called the absolute or objective concept of truth, which each of us constantly uses. The successful rehabilitation of this absolute concept of truth is one of the most important results of modern logic.

This remark implies that the concept of truth had been undermined. Indeed, this was the driving force which produced the dominant relativistic ideologies of our time.

This is why I am inclined to describe the rehabilitation of the concept of truth by the logician and mathematician Alfred Tarski as the most important philosophical result of modern mathematical logic.

I cannot of course discuss this result here; I can only say quite dogmatically that *Tarski* succeeded in providing the simplest and most convincing explanation imaginable of where the agreement of a statement with the facts lies. But this was precisely the task whose hopeless difficulty led to sceptical relativism – with social consequences which I am sure I do not need to spell out here.

The second concept which I have used and which may require elucidation is the concept of explanation or, more precisely, the concept of *causal explanation*.

A purely theoretical problem – a problem of pure science – always consists in the task of finding an explanation, the explanation of a fact or of a phenomenon or of a remarkable regularity or of a remarkable exception from a rule. That which we hope to explain may be called the explicandum. The tentative solution of the problem – that is, the explanation – always consists of a theory, a deductive system, which permits us to explain the explicandum by connecting it logically with other facts (the so-called initial conditions). A fully explicit explanation always consists in point-

ing out the logical derivation (or the derivability) of the explicandum from the theory strengthened by some initial conditions.

Thus the basic logical schema of every explanation consists of a logical deductive inference whose premisses consist of a theory and some initial conditions, and whose conclusion is the explicandum.

This basic schema has a remarkable number of applications. For instance, it may be used to show the distinction between an *ad hoc* hypothesis and an independently testable hypothesis. Further – and this might be of more interest to you – one can analyse logically, in a simple manner, the distinction between theoretical problems, historical problems and problems of applied science. This shows that there is a complete logical justification for the famous *distinction* between theoretical or nomothetic and historical or ideographic sciences – provided that one takes the term 'science' in this context to mean a concern with a definite, logically distinguishable, set of problems.

So much for the elucidation of the logical concepts which I have employed up to now.

Both of these concepts, that of truth, and that of explanation, give rise to the logical development of further concepts which are perhaps even more important for the logic of knowledge or for methodology. The first of these concepts is that of *approximation to the truth* and the second that of the *explanatory power* or the *explanatory content* of a theory.

These two concepts are purely logical concepts in so far as they may be defined with the help of the purely logical concepts of the truth of a statement and of the content of a statement – that is, of the class of logical consequences of a theory.

Both are relative concepts. Although each statement is simply true or false, nevertheless *one* statement can represent a better approximation to the truth than *another* statement. This will be so, for example, if the first statement has 'more' true and 'fewer' false logical consequences than the second. (It is assumed here that the true and the false sub-sets of the sets of consequences of the two statements are comparable.) It can then easily be shown why we rightly assume that Newton's theory is a better approximation to the truth than Kepler's.

Similarly it can be shown that the explanatory power of Newton's theory is greater than that of Kepler's.

Thus we are obtaining logical concepts which underlie the appraisal of our theories, and permit us to speak meaningfully of progress or regress with reference to scientific theories.

So much for the general logic of knowledge. Concerning, in particular, the logic of the social sciences, I should like to introduce some additional theses.

*Twenty-first thesis:* There is no such thing as a purely observational science; there are only sciences in which we theorize (more or less consciously and critically). This also holds for the social sciences.

*Twenty-second thesis:* Psychology is a social science since our thoughts and actions largely depend upon social conditions. Ideas such as (a) imitation, (b) language, (c) the family, are obviously social ideas; and it is clear that the psychology of learning and thinking, and also, for instance, psychoanalysis, cannot exist without utilizing one or other of these social ideas. Thus psychology presupposes social concepts; which shows that it is impossible to explain society exclusively in psychological terms, or to reduce it to psychology. Therefore we cannot look upon psychology as the basis of the social sciences.

What we cannot, in principle, explain psychologically, and what we must presuppose in every psychological explanation, is man's social environment. The task of describing this social environment (that is, with the help of explanatory theories since—as stated before—theory-free descriptions do not exist) is therefore the fundamental task of social science. It might well be appropriate to allot this task to sociology. I therefore assume this in what follows.

*Twenty-third thesis:* Sociology is autonomous in the sense that, to a considerable extent, it can and must make itself independent of psychology. Apart from the dependence of psychology on social ideas, this is also due to the fact that sociology is constantly faced with the task of explaining unintended and often undesired social consequences of human action. An example: competition is a social phenomenon which is usually undesirable for the competitors, but which can and must be explained as a (usually inevitable) unintended consequence of (conscious and planned) actions of the competitors.

Thus even though there may be a psychological explanation for some of the actions of the competitors, the social phenomenon of

competition is a psychologically inexplicable social consequence of these actions.

*Twenty-fourth thesis:* But sociology is also autonomous in a second sense; that is, as what has often been termed the sociology of objective understanding (*verstehende Soziologie*).

*Twenty-fifth thesis:* The logical investigation of the methods of economics yields a result which can be applied to all social sciences. This result shows that there is a *purely objective method* in the social sciences, which may well be called the method of *objective understanding*, or *situational logic*. A social science orientated towards *objective understanding* can be developed independently of all subjective or psychological ideas. Its method consists in analysing the *situation* of the acting person sufficiently to explain the action in terms of the situation without any further help from psychology. Objective 'understanding' consists in realizing that the action was objectively *appropriate to the situation*. In other words, the situation is analysed far enough for the elements which initially appeared to be psychological (such as wishes, motives, memories and associations) to be transformed into elements of the situation. The man with specific wishes therefore becomes a man whose situation may be characterized by the fact that he pursues specific objective *aims*; and a man with particular memories or associations becomes a man whose situation can be characterized by the fact that he is equipped objectively with particular theories or with specific information.

This then allows us to understand actions in an objective sense so that we can say: admittedly, I have different aims and I hold different theories (from, say, Charlemagne); but had I been placed in his situation thus analysed—where the situation includes goals and knowledge—then I, and presumably you too, would have done what he did. The method of situational analysis is certainly an individualistic method and yet it is certainly not a psychological one; for it excludes, in principle, all psychological elements and replaces them with objective situational elements. I usually call it the 'logic of the situation' or 'situational logic'.

*Twenty-sixth thesis:* The explanations of situational logic described here are rational, theoretical reconstructions. They are oversimplified and overschematized and consequently in general *false*. Nevertheless, they can possess a considerable truth content and they can, in the strictly logical sense, be good approximations to the truth, and even better than other testable explanations. In

this sense, the logical concept of approximation to the truth is indispensable for a social science which uses the method of situational analysis. Above all, however, situational analyses are rational, empirically criticizable and capable of improvement. For we may, for instance, find a letter which shows that the knowledge at Charlemagne's disposal was completely different from what we assumed in our analysis. By contrast, psychological or characterological hypotheses are hardly ever criticizable.

*Twenty-seventh thesis:* In general, situational logic assumes a physical world in which we act. This world contains, for example, physical resources, which are at our disposal and about which we know something, and physical barriers about which we also know something (often not very much). Beyond this, situational logic must also assume a social world, inhabited by other people, about whose goals we know something (often not very much), and, furthermore, *social institutions*. These social institutions determine the peculiarly social character of our social environment. They consist of all the social realities of the social world, realities which correspond to the things of the physical world. A grocer's shop or a university institute or a police force or a law are, in this sense, social institutions. Church, state and marriage are also social institutions, as are certain coercive customs like, for instance, hara-kiri in Japan. But in our European society suicide is not a social institution in the sense in which I use the term and in which I assert that the category is of importance.

That was my final thesis. What follows is a suggestion and a short concluding remark.

*Suggestion:* We may, perhaps, adopt tentatively, as the fundamental problems of a purely theoretical sociology, first the study of the general logic of situations, and second the theory of institutions and of traditions. This would include such problems as the following:

1. Institutions do not act; rather, only individuals act, within or on behalf of institutions. The general situational logic of these actions would be the theory of the quasi-actions of institutions.
2. We might construct a theory of intended and unintended institutional consequences of purposive action. This could also lead to a theory of the creation and the development of institutions.

One final comment. I believe that epistemology is important not only for the individual sciences but also for philosophy, and

that the religious and philosophical uneasiness of our time, which surely concerns us all, is largely an uneasiness about the philosophy of human knowledge. Nietzsche called it the European nihilism, and Benda the treason of the intellectuals. I should like to characterize it as a consequence of the Socratic discovery that we know nothing; that is, that we can never justify our theories rationally.

But this important discovery, which has produced, amongst many other malaises, the malaise of existentialism, is only half a discovery; and nihilism can be overcome. For although we cannot justify our theories rationally and cannot even prove that they are probable, we can criticize them rationally. And we can distinguish better from worse theories.

But this was known, even before Socrates, to Xenophanes, who told us:<sup>1</sup>

The gods did not reveal, from the beginning,  
All things to us; but in the course of time,  
Through seeking we may learn, and know things better.

## NOTE

- 1 Compare p.47.