

8. *Power and Society* (New Haven, Conn.: Yale University Press, 1952), Ch. 9, sections 3 and 4.
9. *Ibid.*, p. 228.
10. *Ibid.*, p. 229.
11. *Ibid.*, p. 231.
12. *Ibid.*
13. *Ibid.*, p. 232.
14. *Ibid.*, p. xi.
15. *Ibid.*, p. 231.
16. *Ibid.*, p. 239.
17. *Political Writings*.
18. *Ibid.*, pp. 497–8.
19. *Ibid.*, pp. 497–502.
20. *Ibid.*, p. 500.
21. We might also speak of “interests” here, but this can be seen as included in “wants” and “needs.” Interest may deviate from want, but can only be explicated in terms of such concepts as “satisfaction,” “happiness,” “unhappiness,” etc., the criteria for whose application are ultimately to be found in what we want.
22. In what follows I am indebted to the arguments of Mrs. P. Foot, e.g., to her “When Is a Principle a Moral Principle?” in *Aristotelian Society, Supplementary Vol.* xxviii (1954), and her “Moral Arguments” in *Mind*, A.S.S.V. lxxvii (1958), although I do not know whether she would agree with the conclusions I draw from them.
23. Borrowed with changes from Hare’s *Freedom and Reason* (Oxford: Clarendon Press, 1963).
24. We may use behavior, of course, to judge which of the two constructions to put on a man’s words, but the two are not distinguished by behavioral criteria alone, but also by what a man thinks and feels. It is possible, of course, to challenge a man’s even sincere belief that he is judging of good and bad, and to disvalue it on the grounds that one holds it to be based largely on irrational prejudice or unavowed ambitions or fears. Thus our first segregationist may be judged as not too different from our second. For there is some evidence that segregationist ideas can at least partly be assimilated to neurotic phobias in their psychological roots. But this is just why many people look on the judgments of segregationists as self-deception and unconscious sham. “Really,” they are just expressions of horror. But this respects the logic of “good” as we have outlined it: for it concludes that if the rational base is mere show, then the judgment is mere show. Segregationists, for their part, rarely are of the second type, and pay homage to the logic of “good” by casting about for all sorts of specious reasons of the correct form.
25. Cf. John Searle’s “Meaning and Speech Acts,” *Philosophical Review*, lxxi (1962) 423–32.
26. Thus, if I say, “This is a good car,” and then my friend comes along and says, “Help me choose a car,” I have to eat my words if I am not willing to commend the car to him, *unless* I can adduce some other countervailing factor such as price, my friend’s proclivity to dangerous driving, or whatever. But this complex relationship cannot be expressed in an equivalence, e.g., “This is a good car” entails, “If you are choosing a car, take this.”
27. The terms “descriptive meaning” and “evaluative meaning” can be seen to be seriously misleading, as is evident from the discussion. For they carry the implication that the meaning is “contained” in the word, and can be “unpacked” in statements of logical equivalence. There is rather a descriptive aspect and an evaluative aspect of its role or use, which are, moreover, connected, for we cannot see whether a use of the term carries the evaluation force of “good” unless we can also see whether it enters into the skein of relations which constitute the descriptive dimension of its meaning.

## Chapter 36

### The Value-Oriented Bias of Social Inquiry

*Ernest Nagel*

We turn, finally, to the difficulties said to confront the social sciences because the social values to which students of social phenomena are committed not only color the contents of their findings but also control their assessment of the evidence on which they base their conclusions. Since social scientists generally differ in their value commitments, the “value neutrality” that seems to be so pervasive in the natural sciences is therefore often held to be impossible in social inquiry. In the judgment of many thinkers, it is accordingly absurd to expect the social sciences to exhibit the unanimity so common among natural scientists concerning what are the established facts and satisfactory explanations for them. Let us examine some of the reasons that have been advanced for these contentions. It will be convenient to distinguish four groups of such reasons, so that our discussion will deal in turn with the alleged role of value judgments in (1) the selection of problems, (2) the determination of the contents of conclusions, (3) the identification of fact, and (4) the assessment of evidence.

#### 1

The reasons perhaps most frequently cited make much of the fact that the things a social scientist selects for study are determined by his conception of what are the socially important values. According to one influential view, for example, the student of human affairs deals only with materials to which he attributes “cultural significance,” so that a “value orientation” is inherent in his choice of material for investigation. Thus, although Max Weber was a vigorous proponent of a “value-free” social science—i.e., he maintained that social scientists must appreciate (or “understand”) the values involved in the actions or institutions they are discussing but that it is not their business as objective scientists to approve or disapprove either those values or those actions and institutions—he nevertheless argued that

The concept of culture is a *value-concept*. Empirical reality becomes “culture” to us because and insofar as we relate it to value ideas. It includes those segments and only those segments of reality which have become significant to us because of this value-relevance. Only a small portion of existing concrete reality is colored by our value-conditioned interest and it alone is significant to us. It is significant because it reveals relationships which are important to us due to their connection with our values. Only because and to the extent that this is the case is it worthwhile for us to know it in its individual features. We cannot discover, however, what is meaningful to us by means of a “presuppositionless” investigation of empirical data. Rather perception of its meaningfulness to us is the presupposition of its becoming an *object* of investigation.<sup>1</sup>

It is well-nigh truistic to say that students of human affairs, like students in any other area of inquiry, do not investigate everything, but direct their attention to certain selected portions of the inexhaustible content of concrete reality. Moreover, let us accept the claim, if only for the sake of the argument, that a social scientist addresses himself exclusively to matters which he believes are important because of their assumed relevance to his cultural values.<sup>2</sup> It is not clear, however, why the fact that an investigator selects the materials he studies in the light of problems which interest him and which seem to him to bear on matters he regards as important, is of greater moment for the logic of social inquiry than it is for the logic of any other branch of inquiry. For example, a social scientist may believe that a free economic market embodies a cardinal human value, and he may produce evidence to show that certain kinds of human activities are indispensable to the perpetuation of a free market. If he is concerned with processes which maintain this type of economy rather than some other type, how is this fact more pertinent to the question whether he has adequately evaluated the evidence for his conclusion than is the bearing upon the analogous question of the fact that a physiologist may be concerned with processes which maintain a constant internal temperature in the human body rather than with something else? The things a social scientist *selects for study* with a view to determining the conditions or consequences of their existence may indeed be dependent on the indisputable fact that he is a "cultural being." But similarly, were we not human beings though still capable of conducting scientific inquiry, we might conceivably have an interest neither in the conditions that maintain a free market, nor in the processes involved in the homeostasis of the internal temperature in human bodies, nor for that matter in the mechanisms that regulate the height of tides, the succession of seasons, or the motions of the planets.

In short, there is no difference between any of the sciences with respect to the fact that the interests of the scientist determine what he selects for investigation. But this fact, by itself, represents no obstacle to the successful pursuit of objectively controlled inquiry in any branch of study.

## 2

A more substantial reason commonly given for the value-oriented character of social inquiry is that, since the social scientist is himself affected by considerations of right and wrong, his own notions of what constitutes a satisfactory social order and his own standards of personal and social justice do enter, in point of fact, into his analyses of social phenomena. For example, according to one version of this argument, anthropologists must frequently judge whether the means adopted by some society achieves the intended aim (e.g., whether a religious ritual does produce the increased fertility for the sake of which the ritual is performed); and in many cases the adequacy of the means must be judged by admittedly "relative" standards, i.e., in terms of the ends sought or the standards employed by that society, rather than in terms of the anthropologist's own criteria. Nevertheless, so the argument proceeds, there are also situations in which

we must apply absolute standards of adequacy, that is evaluate the end-results of behavior in terms of purposes we believe in or postulate. This occurs, first, when we speak of the satisfaction of psycho-physical "needs" offered by any culture; secondly, when we assess the bearing of social facts upon survival; and thirdly, when we pronounce upon social integration and stability. In each case our

statements imply judgments as to the worth-whileness of actions, as to "good" or "bad" cultural solutions of the problems of life, and as to "normal" and "abnormal" states of affairs. These are basic judgments which we cannot do without in social enquiry and which clearly do not express a purely personal philosophy of the enquirer or values arbitrarily assumed. Rather do they grow out of the history of human thought, from which the anthropologist can seclude himself as little as can anyone else. Yet as the history of human thought has led not to one philosophy but to several, so the value attitudes implicit in our ways of thinking will differ and sometimes conflict.<sup>3</sup>

It has often been noted, moreover, that the study of social phenomena receives much of its impetus from a strong moral and reforming zeal, so that many ostensibly "objective" analyses in the social sciences are in fact disguised recommendations of social policy. As one typical but moderately expressed statement of the point puts it, a social scientist

cannot wholly detach the unifying social structure that, as a scientist's theory, guides his detailed investigations of human behavior, from the unifying structure which, as a citizen's ideal, he thinks ought to prevail in human affairs and hopes may sometimes be more fully realized. His social theory is thus essentially a program of action along two lines which are kept in some measure of harmony with each other by that theory—action in assimilating social facts for purposes of systematic understanding, and action aiming at progressively molding the social pattern, so far as he can influence it, into what he thinks it ought to be.<sup>4</sup>

It is surely beyond serious dispute that social scientists do in fact often import their own values into their analyses of social phenomena. It is also undoubtedly true that even thinkers who believe human affairs can be studied with the ethical neutrality characterizing modern inquiries into geometrical or physical relations, and who often pride themselves on the absence of value judgments from their own analyses of social phenomena, do in fact sometimes make such judgments in their social inquiries.<sup>5</sup> Nor is it less evident that students of human affairs often hold conflicting values; that their disagreements on value questions are often the source of disagreements concerning ostensibly factual issues; and that, even if value predications are assumed to be inherently capable of proof or disproof by objective evidence, at least some of the differences between social scientists involving value judgments are not in fact resolved by the procedures of controlled inquiry.

In any event, it is not easy in most areas of inquiry to prevent our likes, aversions, hopes, and fears from coloring our conclusions. It has taken centuries of effort to develop habits and techniques of investigation which help safeguard inquiries in the natural sciences against the intrusion of irrelevant personal factors; and even in these disciplines the protection those procedures give is neither infallible nor complete. The problem is undoubtedly more acute in the study of human affairs, and the difficulties it creates for achieving reliable knowledge in the social sciences must be admitted.

However, the problem is intelligible only on the assumption that there is a relatively clear distinction between factual and value judgments, and that however difficult it may sometimes be to decide whether a given statement has a purely factual content, it is in principle possible to do so. Thus, the claim that social scientists are pursuing the

twofold program mentioned in the above quotation makes sense, only if it is possible to distinguish between, on the one hand, contributions to theoretical understanding (whose factual validity presumably does not depend on the social ideal to which a social scientist may subscribe), and on the other hand contributions to the dissemination or realization of some social ideal (which may not be accepted by all social scientists). Accordingly, the undeniable difficulties that stand in the way of obtaining reliable knowledge of human affairs because of the fact that social scientists differ in their value orientations are practical difficulties. The difficulties are not necessarily insuperable, for since by hypothesis it is not impossible to distinguish between fact and value, steps can be taken to identify a value bias when it occurs, and to minimize if not to eliminate completely its perturbing effects.

One such countermeasure frequently recommended is that social scientists abandon the pretense that they are free from all bias, and that instead they state their value assumptions as explicitly and fully as they can.<sup>6</sup> The recommendation does not assume that social scientists will come to agree on their social ideals once these ideas are explicitly postulated, or that disagreements over values can be settled by scientific inquiry. Its point is that the question of how a given ideal is to be realized, or the question whether a certain institutional arrangement is an effective way of achieving the ideal, is on the face of it not a value question, but a factual problem—to be resolved by the objective methods of scientific inquiry—concerning the adequacy of proposed means for attaining stipulated ends. Thus, economists may permanently disagree on the desirability of a society in which its members have a guaranteed security against economic want, since the disagreement may have its source in inarbitrable preference for different social values. But when sufficient evidence is made available by economic inquiry, economists do presumably agree on the factual proposition that, if such a society is to be achieved, then a purely competitive economic system will not suffice.

Although the recommendation that social scientists make fully explicit their value commitments is undoubtedly salutary, and can produce excellent fruit, it verges on being a counsel of perfection. For the most part we are unaware of many assumptions that enter into our analyses and actions, so that despite resolute efforts to make our preconceptions explicit some decisive ones may not even occur to us. But in any event, the difficulties generated for scientific inquiry by unconscious bias and tacit value orientations are rarely overcome by devout resolutions to eliminate bias. They are usually overcome, often only gradually, through the self-corrective mechanisms of science as social enterprise. For modern science encourages the invention, the mutual exchange, and the free but responsible criticisms of ideas; it welcomes competition in the quest for knowledge between independent investigators, even when their intellectual orientations are different; and it progressively diminishes the effects of bias by retaining only those proposed conclusions of its inquiries that survive critical examination by an indefinitely large community of students, whatever be their value preferences or doctrinal commitments. It would be absurd to claim that this institutionalized mechanism for sifting warranted beliefs has operated or is likely to operate in social inquiry as effectively as it has in the natural sciences. But it would be no less absurd to conclude that reliable knowledge of human affairs is unattainable merely because social inquiry is frequently value oriented.

3

There is a more sophisticated argument for the view that the social sciences cannot be value free. It maintains that the distinction between fact and value assumed in the preceding discussion is untenable when purposive human behavior is being analyzed, since in this context value judgments enter inextricably into what appear to be "purely descriptive" (or factual) statements. Accordingly, those who subscribe to this thesis claim that an ethically neutral social science is in principle impossible, and not simply that it is difficult to attain. For if fact and value are indeed so fused that they cannot even be distinguished, value judgments cannot be eliminated from the social sciences unless all predications are also eliminated from them, and therefore unless these sciences completely disappear.

For example, it has been argued that the student of human affairs must distinguish between valuable and undesirable form of social activity, on pain of failing in his "plain duty" to present social phenomena truthfully and faithfully:

Would one not laugh out of court a man who claimed to have written a sociology of art but who actually had written a sociology of trash? The sociologist of religion must distinguish between phenomena which have a religious character and phenomena which are a-religious. To be able to do this, he must understand what religion is. . . . Such understanding enables and forces him to distinguish between genuine and spurious religion, between higher and lower religions; these religions are higher in which the specifically religious motivations are effective to a higher degree. . . . The sociologist of religion cannot help noting the difference between those who try to gain it by a change of heart. Can he see this difference without seeing at the same time the difference between a mercenary and nonmercenary attitude? . . . The prohibition against value-judgments in social science would lead to the consequence that we are permitted to give a strictly factual description of the overt acts that can be observed in concentration camps, and perhaps an equally factual analysis of the motivations of the actors concerned: we would not be permitted to speak of cruelty. Every reader of such a description who is not completely stupid would, of course, see that the actions described are cruel. The factual description would, in truth, be a bitter satire. What claimed to be a straightforward report would be an unusually circumlocutory report. . . . Can one say anything relevant on public opinion polls . . . without realizing the fact that many answers to the questionnaires are given by unintelligent, uninformed, deceitful, and irrational people, and that not a few questions are formulated by people of the same caliber—can one say anything relevant about public opinion polls without committing one value-judgment after another?<sup>7</sup>

Moreover, the assumption implicit in the recommendation discussed above for achieving ethical neutrality is often rejected as hopelessly naive—that is the assumption, it will be recalled, that relations of means to ends can be established without commitments to these ends, so that the conclusions of social inquiry concerning such relations are objective statements which make *conditional* rather than categorical assertions about values. This assumption is said by its critics to rest on the supposition that men attach value only to the ends they seek, and not to the means for realizing their aims. However, the supposition is alleged to be grossly mistaken. For the character

of the means one employs to secure some goal affects the nature of the total outcome; and the choice men make between alternative means for obtaining a given end depends on the values they ascribe to those alternatives. In consequence, commitments to specific valuations are said to be involved even in what appear to be purely factual statements about means-ends relations.<sup>8</sup>

We shall not attempt a detailed assessment of this complex argument, for a discussion of the numerous issues it raises would take us far afield. However, three claims made in the course of the argument will be admitted without further comment as indisputably correct: that a large number of characterizations sometimes assumed to be purely factual descriptions of social phenomena do indeed formulate a type of value judgment; that it is often difficult, and in any case usually inconvenient in practice, to distinguish between the purely factual and the "evaluative" contents of many terms employed in the social sciences; and that values are commonly attached to means and not only to ends. However, these admissions do not entail the conclusion that, in a manner unique to the study of purposive human behavior, fact and value are fused beyond the possibility of distinguishing between them. On the contrary, as we shall try to show, the claim that there is such a fusion and that a value-free social science is therefore inherently absurd, confounds two quite different senses of the term "value judgment": the sense in which a value judgment expresses *approval or disapproval* either of some moral (or social) ideal, or of some action (or institution) because of a commitment to such an ideal; and the sense in which a value judgment expresses *an estimate* of the degree to which some commonly recognized (and more or less clearly defined) type of action, object, or institution is embodied in a given instance.

It will be helpful to illustrate these two senses of "value judgment" first with an example from biology. Animals with bloodstreams sometimes exhibit the condition known as "anemia." An anemic animal has a reduced number of red blood corpuscles, so that, among other things, it is less able to maintain a constant internal temperature than are members of its species with a "normal" supply of such blood cells. However, although the meaning of the term "anemia" can be made quite clear, it is not in fact defined with complete precision; for example, the notion of a "normal" number of red corpuscles that enters into the definition of the term is itself somewhat vague, since this number varies with the individual members of a species as well as with the state of a given individual at different times (such as its age or the altitude of its habitat). But in any case, to decide whether a given animal is anemic an investigator must judge whether the available evidence *warrants* the conclusion that the specimen is anemic.<sup>9</sup> He may perhaps think of anemia as being of several distinct kinds (as is done in actual medical practice), or he may think of anemia as a condition that is realizable with greater or lesser completeness (just as certain plane curves are sometimes described as better or worse approximations to a circle as defined in geometry); and, depending on which of these conceptions he adopts, he may decide either that his specimen has a certain kind of anemia or that it is anemic only to a certain degree. When the investigator reaches a conclusion, he can therefore be said to be making a "value judgment," in the sense that he has in mind some standardized type of physiological condition designated as "anemia" and that he *assesses* what he knows about his specimen with the measure provided by this assumed standard. For the sake of easy reference, let us call such evaluations of the evidence, which conclude that a given characteristic is in some degree present (or absent) in a given instance, "characterizing value judgments."

On the other hand, the student may also make a quite different sort of value judgment, which asserts that, since an anemic animal has diminished powers of maintaining itself, anemia is an undesirable condition. Moreover, he may apply this general judgment to a particular case, and so come to deplore the fact that a given animal is anemic. Let us label such evaluations, which conclude that some envisaged or actual state of affairs is worthy of approval or disapproval, "appraising value judgments."<sup>10</sup> It is clear, however, that an investigator making a characterizing value judgment is not thereby logically bound to affirm or deny a corresponding appraising evaluation. It is no less evident that he cannot consistently make an appraising value judgment about a given instance (e.g., that it is undesirable for a given animal to continue being anemic), unless he can affirm a characterizing judgment about that instance independently of the appraising one (e.g., that the animal is anemic). Accordingly, although characterizing judgments are necessarily entailed by many appraising judgments, making appraising judgments is not a necessary condition for making characterizing ones.

Let us now apply these distinctions to some of the contentions advanced in the argument quoted above. Consider first the claim that the sociologist of religion must recognize the difference between mercenary and nonmercenary attitudes, and that in consequence he is inevitably committing himself to certain values. It is certainly beyond dispute that these attitudes are commonly distinguished; and it can also be granted that a sociologist of religion needs to understand the difference between them. But the sociologist's obligation is in this respect quite like that of the student of animal physiology, who must also acquaint himself with certain distinctions—even though the physiologist's distinction between, say, anemic and nonanemic may be less familiar to the ordinary layman and is in any case much more precise than is the distinction between mercenary and nonmercenary attitudes. Indeed, because of the vagueness of these latter terms, the scrupulous sociologist may find it extremely difficult to decide whether or not the attitude of some community toward its acknowledged gods is to be characterized as mercenary; and if he should finally decide, he may base his conclusion on some inarticulated "total impression" of that community's manifest behavior, without being able to state exactly the detailed grounds for his decision. But however this may be, the sociologist who claims that a certain attitude manifested by a given religious group is mercenary, just as the physiologist who claims that a certain individual is anemic, is making what is primarily a characterizing value judgment. In making these judgments, neither the sociologist nor the physiologist is necessarily committing himself to any values other than the values of scientific probity; and in this respect, therefore, there appears to be no difference between social and biological (or for that matter, physical) inquiry.

On the other hand, it would be absurd to deny that in characterizing various actions as mercenary, cruel, or deceitful, sociologists are frequently (although perhaps not always wittingly) asserting appraising as well as characterizing value judgments. Terms like "mercenary," "cruel," or "deceitful" as commonly used have a widely recognized pejorative overtone. Accordingly, anyone who employs such terms to characterize human behavior can normally be assumed to be stating his disapprobation of that behavior (or his approbation, should he use terms like "nonmercenary," "kindly," or "truthful"), and not simply characterizing it.

However, although many (but certainly not all) ostensibly characterizing statements asserted by social scientists undoubtedly express commitments to various (not always compatible) values, a number of "purely descriptive" terms as used by natural scientists

in certain contexts sometimes also have an unmistakably appraising value connotation. Thus, the claim that a social scientist is making appraising value judgments when he characterizes respondents to questionnaires as uninformed, deceitful, or irrational can be matched by the equally sound claim that a physicist is also making such judgments when he describes a particular chronometer as inaccurate, a pump as inefficient, or a supporting platform as unstable. Like the social scientist in this example, the physicist is characterizing certain objects in his field of research; but, also like the social scientist, he is in addition expressing his disapproval of the characteristics he is ascribing to those objects.

Nevertheless—and this is the main burden of the present discussion—there are no good reasons for thinking that it is inherently impossible to *distinguish* between the characterizing and the appraising judgments implicit in many statements, whether the statements are asserted by students of human affairs or by natural scientists. To be sure, it is not always easy to make the distinction formally explicit in the social sciences—in part because much of the language employed in them is very vague, in part because appraising judgments that may be implicit in a statement tend to be overlooked by us when they are judgments to which we are actually committed though without being aware of our commitments. Nor is it always useful or convenient to perform this task. For many statements implicitly containing both characterizing and appraising evaluations are sometimes sufficiently clear without being reformulated in the manner required by the task; and the reformulations would frequently be too unwieldy for effective communication between members of a large and unequally prepared group of students. But these are essentially practical rather than theoretical problems. The difficulties they raise provide no compelling reasons for the claim that an ethically neutral social science is inherently impossible.

Nor is there any force in the argument that, since values are commonly attached to means and not only to ends, statements about means-ends relations are not value free. Let us test the argument with a simple example. Suppose that a man with an urgent need for a car but without sufficient funds to buy one can achieve his aim by borrowing a sum either from a commercial bank or from friends who waive payment of any interest. Suppose further that he dislikes becoming beholden to his friends for financial favors, and prefers the impersonality of a commercial loan. Accordingly, the comparative values this individual places upon the alternative means available to him for realizing his aim obviously control the choice he makes between them. Now the *total* outcome that would result from his adoption of one of the alternatives is admittedly different from the *total* outcome that would result from his adoption of the other alternative means, each of them would achieve a result—namely, his purchase of the needed car—that is common to both the total outcomes. In consequence, the validity of the statement that he could buy the car by borrowing money from a bank, as well as of the statement that he could realize this aim by borrowing from friends, is unaffected by the valuations placed upon the means, so that neither statement involves any special appraising evaluations. In short, the statements about means-ends relations are value free.

4

There remains for consideration the claim that a value-free social science is impossible, because value commitments enter into the very *assessment of evidence* by social

scientists, and not simply into the content of the conclusions they advance. This version of the claim itself has a large number of variant forms, but we shall examine only three of them.

The least radical form of the claim maintains that the conceptions held by a social scientist of what constitute cogent evidence or sound intellectual workmanship are the products of his education and his place in society, and are affected by the social values transmitted by this training and associated with this social position; accordingly, the values to which the social scientist is thereby committed determine which statements he *accepts* as well-grounded conclusions about human affairs. In this form, the claim is a *factual* thesis, and must be supported by detailed empirical evidence concerning the influences exerted by a man's moral and social values upon what he is ready to acknowledge as sound social analysis. In many instances such evidence is indeed available; and differences between social scientists in respect to what they accept as credible can sometimes be attributed to the influence of national, religious, economic, and other kinds of bias. However, this variant of the claim excludes neither the possibility of recognizing assessments of evidence that are prejudiced by special value commitments, nor the possibility of correcting for such prejudice. It therefore raises no issue that has not already been discussed when we examined the second reason for the alleged value-oriented character of social inquiry.

Another but different form of the claim is based on recent work in theoretical statistics dealing with the assessment of evidence for so-called statistical hypotheses—hypotheses concerning the probabilities of random events, such as the hypothesis that the probability of a male human birth is one-half. The central idea relevant to the present question that underlies these developments can be sketched in terms of an example. Suppose that, before a fresh batch of medicine is put on sale, tests are performed on experimental animals for its possible toxic effects because of impurities that have not been eliminated in its manufacture, for example, by introducing small quantities of the drug into the diet of one hundred guinea pigs. If no more than a few of the animals show serious after-effects, the medicine is to be regarded as safe, and will be marketed; but if a contrary result is obtained the drug will be destroyed. Suppose now that three of the animals do in fact become gravely ill. Is this outcome significant (i.e., does it indicate that the drug has toxic effects), or is it perhaps an "accident" that happened because of some peculiarity in the affected animals? To answer the question, the experimenter must *decide* on the basis of the evidence between the hypothesis  $H_1$ : the drug is toxic, and the hypothesis  $H_2$ : the drug is not toxic. But how is he to decide, if he aims to be "reasonable" rather than arbitrary? Current statistical theory offers him a rule for making a reasonable decision, and bases the rule on the following analysis.

Whatever decision the experimenter may make, he runs the risk of committing either one of two types of errors: he may reject a hypothesis though in fact it is true (i.e., despite the fact that  $H_1$  is actually true, he mistakenly decides against it in the light of the evidence available to him); or he may accept a hypothesis though in fact it is false. His decision would therefore be eminently reasonable, were it based on a rule guaranteeing that no decision ever made in accordance with the rule would commit either type of error. Unhappily, there are no rules of this sort. The next suggestion is to find a rule such that, when decisions are made in accordance with it, the relative frequency of each type of error is quite small. But unfortunately, the risks of committing each type of error are not independent; for example, it is in general logically impossible to find a rule so that decisions based on it will commit each type of error with a relative

frequency not greater than one in a thousand. In consequence, before a reasonable rule can be proposed, the experimenter must compare the relative importance to himself of the two types of error, and state what risk he is willing to take of committing the type of error he judges to be the more important one. Thus, were he to reject  $H_1$  though it is true (i.e., were he to commit an error of the first type), all the medicine under consideration would be put on sale, and the lives of those using it would be endangered; on the other hand, were he to commit an error of the second type with respect to  $H_1$ , the entire batch of medicine would be scrapped, and the manufacturer would incur a financial loss. However, the preservation of human life may be of greater moment to the experimenter than financial gain; and he may perhaps stipulate that he is unwilling to base his decision on a rule for which the risk of committing an error of the first type is greater than one such error in a hundred decisions. If this is assumed, statistical theory can specify a rule satisfying the experimenter's requirement, though how this is done, and how the risk of committing an error of the second type is calculated, are technical questions of no concern to us. The main point to be noted in this analysis is that the rule presupposes certain appraising judgments of value. In short, if this result is generalized, statistical theory appears to support the thesis that value commitments enter decisively into the rules for assessing evidence for statistical hypotheses.<sup>11</sup>

However, the theoretical analysis upon which this thesis rests does not entail the conclusion that the rules actually employed in every social inquiry for assessing evidence necessarily involve some *special* commitments, i.e., commitments such as those mentioned in the above example, as distinct from those generally implicit in science as an enterprise aiming to achieve reliable knowledge. Indeed, the above example illustrating the reasoning in current statistical theory can be misleading, insofar as it suggests that alternative decisions between statistical hypothesis must invariably lead to alternative actions having immediate practical consequences upon which different special values are placed. For example, a theoretical physicist may have to decide between two statistical hypotheses concerning the probability of certain energy exchanges in atoms; and a theoretical sociologist may similarly have to choose between two statistical hypotheses concerning the relative frequency of childless marriages under certain social arrangements. But neither of these men may have any *special* values at stake associated with the alternatives between which he must decide, other than the values, to which he is committed as a member of a scientific community, to conduct his inquiries with probity and responsibility. Accordingly, the question whether any special value commitments enter into assessments of evidence in either the natural or social sciences is not settled one way or the other by theoretical statistics; and the question can be answered only by examining actual inquiries in the various scientific disciplines.

Moreover, nothing in the reasoning of theoretical statistics depends on what particular subject matter is under discussion when a decision between alternative statistical hypotheses is to be made. For the reasoning is entirely general; and reference to some special subject matter becomes relevant only when a definite numerical value is to be assigned to the risk some investigator is prepared to take of making an erroneous decision concerning a given hypothesis. Accordingly, if current statistical theory is used to support the claim that value commitments enter into the assessment of evidence for statistical hypotheses in social inquiry, statistical theory can be used with equal justification to support analogous claims for all other inquiries as well. In short,

the claim we have been discussing establishes no difficulty that supposedly occurs in the search for reliable knowledge in the study of human affairs which is not also encountered in the natural sciences.

A third form of this claim is the most radical of all. It differs from the first variant mentioned above in maintaining that there is a necessary *logical* connection, and not merely a contingent or causal one, between the "social perspective" of a student of human affairs and his standards of competent social inquiry, and in consequence the influence of the special values to which he is committed because of his own social involvements is not eliminable. This version of the claim is implicit in Hegel's account of the "dialectical" nature of human history and is integral to much Marxist as well as non-Marxist philosophy that stresses the "historically relative" character of social thought. In any event, it is commonly based on the assumption that, since social institutions and their cultural products are constantly changing, the intellectual apparatus required for understanding them must also change; and every idea employed for this purpose is therefore adequate only for some particular stage in the development of human affairs. Accordingly, neither the substantive concepts adopted for classifying and interpreting social phenomena, nor the logical canons used for estimating the worth of such concepts, have a "timeless validity"; there is no analysis of social phenomena which is not the expression of some special social standpoint, or which does not reflect the interests and values dominant in some sector of the human scene at a certain stage in its history. In consequence, although a sound distinction can be made in the natural sciences between the origin of a man's views and their factual validity, such a distinction allegedly cannot be made in social inquiry; and prominent exponents of "historical relativism" have therefore challenged the universal adequacy of the thesis that "the genesis of a proposition is under all circumstances irrelevant to its truth." As one influential proponent of this position puts the matter.

The historical and social genesis of an idea would only be irrelevant to its ultimate validity if the temporal and social conditions of its emergence had no effect on its content and form. If this were the case, any two periods in the history of human knowledge would only be distinguished from one another by the fact that in the earlier period certain things were still unknown and certain errors still existed which, through later knowledge were completely corrected. This simple relationship between an earlier incomplete and a later complete period of knowledge may to a large extent be appropriate for the exact sciences. . . . For the history of the cultural sciences, however, the earlier stages are not quite so simply superseded by the later stages, and it is not so easily demonstrable that early errors have subsequently been corrected. Every epoch has its fundamentally new approach and its characteristic point of view, and consequently sees the "same" object from a new perspective. . . . The very principles, in the light of which knowledge is to be criticized, are themselves found to be socially and historically conditioned. Hence their application appears to be limited to given historical periods and the particular types of knowledge then prevalent.<sup>12</sup>

Historical research into the influence of society upon the beliefs men hold is of undoubted importance for understanding the complex nature of the scientific enterprise; and the sociology of knowledge—as such investigations have come to be called—has produced many clarifying contributions to such an understanding. However, these

admittedly valuable services of the sociology of knowledge do not establish the radical claim we have been stating. In the first place, there is no competent evidence to show that the principles employed in social inquiry for assessing the intellectual products are necessarily determined by the social perspective of the inquirer. On the contrary, the "facts" usually cited in support of this contention establish at best only a contingent causal relation between a man's social commitments and his canons of cognitive validity. For example, the once fashionable view that the "mentality" or logical operations of primitive societies differ from those typical in Western civilization—a discrepancy that was attributed to differences in the institutions of the societies under comparison—is now generally recognized to be erroneous, because it seriously misinterprets the intellectual processes of primitive peoples. Moreover, even extreme exponents of the sociology of knowledge admit that most conclusions asserted in mathematics and natural science are neutral to differences in social perspective of those asserting them, so that the genesis of these propositions is irrelevant to their validity. Why cannot propositions about human affairs exhibit a similar neutrality, at least in some cases? Sociologists of knowledge do not appear to doubt that the truth of the statement that two horses can in general pull a heavier load than can either horse alone, is logically independent of the social status of the individual who happens to affirm the statement. But they have not made clear just what are the inescapable considerations that allegedly make such independence inherently impossible for the analogous statement about human behavior, that two laborers can in general dig a ditch of given dimensions more quickly than can either laborer working alone.

In the second place, the claim faces a serious and frequently noted dialectical difficulty—that proponents of the claim have succeeded in meeting only by abandoning the substance of the claim. For let us ask what is the cognitive status of the thesis that a social perspective enters essentially into the content as well as the validation of every assertion about human affairs. Is this thesis meaningful and valid only for those who maintain it and who thus subscribe to certain values because of their distinctive social commitments? If so, no one with a different social perspective can properly understand it; its acceptance as valid is strictly limited to those who can do so, and social scientists who subscribe to a different set of social values ought therefore dismiss it as empty talk. Or is the thesis singularly exempt from the class of assertions to which it applies, so that its meaning and truth are not inherently related to the social perspectives of those who assert it? If so, it is not evident why the thesis is so exempt; but in any case, the thesis is then a conclusion of inquiry into human affairs that is presumably "objectively valid" in the usual sense of this phrase—and, if there is one such conclusion, it is not clear why there cannot be others as well.

To meet this difficulty, and to escape the self-defeating skeptical relativism to which the thesis is thus shown to lead, the thesis is sometimes interpreted to say that, though "absolutely objective" knowledge of human affairs is unattainable, a "relational" form of objectivity called "relationism" can nevertheless be achieved. On this interpretation, a social scientist can discover just what his social perspective is; and if he then formulates the conclusions of his inquiries "relationally," so as to indicate that his findings conform to the canons of validity implicit in his perspective, his conclusions will have achieved a "relational" objectivity. Social scientists sharing the same perspective can be expected to agree in their answers to a given problem when the canons of validity characteristic of their common perspective are correctly applied. On the other hand, students of social phenomena who operate within different but incongruous social

perspectives can also achieve objectivity, if in no other way than by a "relational" formulation of what must otherwise be incompatible results obtained in their several inquiries. However, they can also achieve it in "a more roundabout fashion," by undertaking "to find a formula for translating the results of one into those of the other and to discover a common denominator for these varying perspectivist insights."<sup>13</sup>

But it is difficult to see in what way "relational objectivity" differs from "objectivity" without the qualifying adjective and in the customary sense of the word. For example, a physicist who terminates an investigation with the conclusion that the velocity of light in water has a certain numerical value when measured in terms of a stated system of units, by a stated procedure, and under stated experimental conditions, is formulating his conclusion in a manner that is "relational" in the sense intended; and his conclusion is marked by "objectivity," presumably because it mentions the "relational" factors upon which the assigned numerical value of the velocity depends. However, it is fairly standard practice in the natural sciences to formulate certain types of conclusions in this fashion. Accordingly, the proposal that the social sciences formulate their findings in an analogous manner carries with it the admission that it is not in principle impossible for these disciplines to establish conclusions having the objectivity of conclusions reached in other domains of inquiry. Moreover, if the difficulty we are considering is to be resolved by the suggested translation formulas for rendering the "common denominators" of conclusions stemming from divergent social perspectives, those formulas cannot in turn be "situationally determined" in the sense of this phrase under discussion. For if those formulas were so determined, the same difficulty would crop up anew in connection with them. On the other hand, a search for such formulas is a phase in the search for invariant relations in a subject matter, so that formulations of these relations are valid irrespective of the particular perspective one may select from some class of perspectives on that subject matter. In consequence, in acknowledging that the search for such invariants in the social sciences is not inherently bound to fail, proponents of the claim we have been considering abandon what at the outset was its most radical thesis.

In brief, the various reasons we have been examining for the intrinsic impossibility of securing objective (i.e., value free and unbiased) conclusions in the social sciences do not establish what they purport to establish, even though in some instances they direct attention to undoubtedly important practical difficulties frequently encountered in these disciplines.

#### Notes

1. Max Weber, *The Methodology of the Social Sciences*, The Free Press, New York, 1949, p. 76.
2. This question receives some attention below in the discussion of the fourth difficulty.
3. S. F. Nadel, *The Foundations of Social Anthropology*, The Free Press, New York, 1951, pp. 53–54. The claim is sometimes also made that the exclusion of value judgments from social science is undesirable as well as impossible. "We cannot disregard all questions of what is socially desirable without missing the significance of many social facts; for since the relation of means to ends is a special form of that between parts and wholes, the contemplation of social ends enables us to see the relations of whole groups of facts to each other and to larger systems of which they are parts." Morris R. Cohen, *Reason and Nature*, New York, 1931, p. 343.
4. Edwin A. Burt, *Right Thinking*, New York, 1946, p. 522.
5. For a documented account, see Gunnar Myrdal, *Value in Social Theory*, London, 1958, pp. 134–52.
6. See, e.g., S. F. Nadel, op. cit., p. 54; also Gunnar Myrdal, op. cit., p. 120, as well as his *Political Element in the Development of Economic Theory*, Cambridge, Mass., 1954, esp. Chap. 8.

7. Leo Strauss, "The Social Science of Max Weber," *Measure*, Vol. 2 (1951), pp. 211–14. For a discussion of this issue as it bears upon problems in the philosophy of law, see Lon Fuller, "Human Purpose and Natural Law," *Natural Law Forum*, Vol. 3 (1958), pp. 68–76; Ernest Nagel, "On the Fusion of Fact and Value: A Reply to Professor Fuller," *op. cit.*, pp. 77–82; Lon L. Fuller, "A Rejoinder to Professor Nagel," *op. cit.*, pp. 83–104; Ernest Nagel, "Fact, Value, and Human Purpose," *Natural Law Forum*, Vol. 4 (1959), pp. 26–43.
8. Cf. Gunnar Myrdal, *Value in Social Theory*, London, 1958, pp. xxii, 211–13.
9. The evidence is usually a count of red cells in a sample from the animal's blood. However, it should be noted that "the red cell count gives only an estimate of the *number of cells per unit quantity of blood*," and does not indicate whether the body's total supply of red cells is increased or diminished. Charles H. Best and Norman B. Taylor, *The Physiological Basis of Medical Practice*, 6th ed., Baltimore, 1955, pp. 11, 17.
10. It is irrelevant to the present discussion what view is adopted concerning the ground upon which such judgments supposedly rest—whether those grounds are simply arbitrary preferences, alleged intuitions of "objective" values, categorical moral imperatives, or anything else that has been proposed in the history of value theory. For the distinction made in the text is independent of any particular assumption about the foundations of appraising value judgments, "ultimate" or otherwise.
11. The above example is borrowed from the discussion in J. Neymann, *First Course in Probability and Statistics*, New York, 1950, Chap. 5, where an elementary technical account of recent developments in statistical theory is presented. For a nontechnical account, see Irwin D. J. Bross, *Design for Decision*, New York, 1953, also R. B. Braithwaite, *Scientific Explanation*, Cambridge, Eng., 1953, Chap. 7.
12. Karl Mannheim, *Ideology and Utopia*, New York, 1959, pp. 271, 288, 292. The essay from which the above excerpts are quoted was first published in 1931, and Mannheim subsequently modified some of the views expressed in it. However, he reaffirmed the thesis stated in the quoted passages as late as 1946, the year before his death. See his letter to Kurt H. Wolff, dated April 15, 1946, quoted in the latter's "Sociology of Knowledge and Sociological Theory," in *Symposium on Sociological Theory* (ed. by Llewellyn Gross), Evanston, Ill., 1959, p. 571.
13. Karl Mannheim, *op. cit.*, pp. 300–1.

## Chapter 37

### The Philosophical Importance of the Rosenthal Effect

*Michael Martin*

Robert Rosenthal and his colleagues have performed psychological experiments the philosophical importance of which has yet to be seriously considered. The purpose of this chapter will be to describe briefly Rosenthal's work and its importance for philosophical issues connected with social sciences.

#### *Rosenthal's Experiments*

Rosenthal's early experimental studies were connected with the effect an experimenter's expectancy about the results of an experiment have on the outcome of the experiment. He claimed to have shown in experiments with human and animal subjects that the expectancy an experimenter has about the outcome of an experiment unwittingly affects the outcome of the experiment in the direction of the expectancy. In later experiments Rosenthal claimed to have shown that the expectancies of teachers affect their students' behavior in the direction of the expectancies. This effect on behavior (of both experimenter and teacher) has come to be known in the literature as the Rosenthal effect. Let us consider three experiments.

One experiment was concerned with the effect that an experimenter's expectancy has on subjects' ratings of photographs.<sup>1</sup> Two groups of subjects, group  $G_1$  and group  $G_2$ , were asked to rate photographs of people on a scale from  $-10$  to  $+10$  in terms of whether the people in the photographs had recently experienced success or failure. (The photographs actually had been chosen so that on the average the people should be seen as neither successful nor unsuccessful, but as neutral.) The experimenters who administered the test to the subjects in group  $G_1$  were told that their group should average about  $+5$ , while the experimenters who administered the test to the subjects in group  $G_2$  were told that their group should average  $-5$ . Aside from this difference the instructions to the experimenters for both groups were the same. The experimenters read exactly the same instructions to their subjects. Nevertheless, the results of the experiment for the two groups were different: group  $G_1$  averaged  $+0.40$  while group  $G_2$  averaged  $-0.08$  in their ratings. The experiment with minor variations was replicated several times.

Another experiment was concerned with the effect experimenter expectancy has on the performance of animals.<sup>2</sup> One group of experimenters was given rats which they were told were "maze bright" rats; a second group of experimenters was given rats which they were told were "maze dull" rats. (In reality the rats were randomly assigned to the two groups and were not bred for maze learning.) The two groups of rats were taught to run a T-maze by the two groups of experimenters. It turned out that the rats designated as maze bright learned to run the maze better than the rats designated as maze dull. In a similar experiment similar results were obtained with rats learning