What is a Normative Science?

Irdell Jenkins


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WHAT IS A NORMATIVE SCIENCE?

In a paper previously published in this Journal, I advanced and developed a concept which I christened, with an unkindness common to many parents, the Postulate of an Impoverished Reality. By this name I referred to the general doctrine which maintains that nature is in fact much simpler and barer than it appears to us in experience, or, stated more explicitly, that real things have in themselves only the primary properties of extension, mass, figure, and motion. In that paper, I argued that this doctrine is the final abstraction upon which modern culture as a whole is based—the postulate that states our ultimate opinion about the character of nature and so pervades all of our thought. This contention was supported both analytically and historically; its positive and negative implications were developed; the process through which it came to dominate all modern thought and action was traced; and the effects that it has had upon the beliefs and practices of contemporary society were briefly exhibited.

My present interest lies exclusively in a further elaboration of this last phase of the subject: I wish here to indicate some of the more important theoretical and practical consequences that have flowed from this postulate. Particularly, I am concerned with the sharp bifurcations of both nature and experience that have resulted from it, and with the impact of these bifurcations upon human inquiry and the status of knowledge. This is evidently a large theme, and in the effort to control it I have centered attention primarily upon that peculiar modern phenomenon, the "normative science." It is my specific purpose to examine carefully this concept of normative science: to expose its origin, its character, its effects, and its ultimate invalidity.

My thesis can be briefly stated: I think that the clean disjunction that modernity has drawn between descriptive and normative disciplines is both vicious and unnecessary. It is vicious because it imposes dichotomies upon experience and nature; because it entails further invidious bifurcations, such as those between facts and values, measurement and criticism, and the actual and the

ideal; and because it attaches an undue significance to one of these domains while virtually draining away significance from the other. It is unnecessary because it rests upon a gratuitous assumption about the character of the real: an assumption which is widely made though rarely acknowledged, which is denied while it continues to be employed, and which has made more than manifest its inadequacy. I shall seek to establish these contentions by detailed argument.

I

The first point that arises in the development of this thesis is to state what is usually and currently meant by a normative science. This is not easy. Attempts even at precise definition are rare. And when they are essayed they usually take a negative form: the writer explains what is meant by a "descriptive" science, and then defines "normative" by contrast. Thus, John Dewey, in the article on Normative Science in Baldwin's Dictionary of Philosophy and Psychology, states the matter in these terms:

The natural sciences aim simply to describe phenomena and explain them in terms of laws or principles homogeneous with the facts. The explaining principles are, moreover, mechanical, having to do with conditions of manifestation in time. In the philosophical sciences, facts are interpreted with reference to their meaning, or value—their significance from the position occupied, or part played, by them in the total make-up of experience. The standpoint, moreover, is teleological, since the interest is not in the conditions of origin, but in the fulfillment of purpose in realizing their appropriate values.

Lévy-Bruhl, in La Morale et la Science des Moeurs, makes the same point even more explicitly:

Science, by definition, has no other function than to know that which is. . . . Morals pursues an essentially different object. Morality is, in essence, legislative. It has not the function of knowing, but of prescribing. . . . Normative, it is then also necessarily constructive. It does not have the task of analyzing a given reality, but of constructing, in conformity with its own principles, the order which should exist.²

Almost everywhere in modern thought this general distinction is accepted even when not acknowledged. The natural sciences are recognized as representing the type of knowledge: they are precise and exact; they describe the behavior of what is; they express this in terms of constant patterns; and they permit of prediction and control of the data that they report. By contrast, the moral or human sciences are vague and uncertain; they criticize what is, and demand, for reasons that are never wholly clear, that

² Translation by the present author.
this be otherwise; they express themselves in terms of a nebulous ought-to-be; and the enlightenment they pretend to cast on their data is too meager to afford a basis for aught but further argument.

Of course, this conception would be seriously qualified by contemporary philosophers of a more idealistic or realistic bent, who would insist upon the cognitive validity of the normative disciplines. Yet even these men accept the fact and the significance of the distinction. Thus, Professor Urban, who clearly at least wants to continue the classical tradition in philosophy, sums up the question in these terms:

By descriptive science is understood that type of knowledge which we have characterized as systematized explaining. The idea underlying this designation is that the object of knowledge in this field is ultimately to know what a thing really is. . . . By normative science, on the other hand, is understood something quite different. It is, as we have said, systematized valuing. By discovering the values of things, more especially the relative values of things, we also discover what ought to be as well as merely what is. . . . The forms of conduct or behavior which have this character of oughtness are then called standards or norms. . . . A standard or norm of conduct is in a sense a description also—a description of the morally good or the humanly valuable. . . . But a norm or standard is a description of a particular kind or, better expressed, it is something more than a mere description of the matter of fact of the moral life; it is at the same time the delineation of an ideal. . . . It is because then of this character of norms as ideals that the philosophical problems peculiar to morals arise. A norm is a norm because it tells us what ought to be, but knowledge is usually knowledge of what actually is; how then can we have valid knowledge of what ought to be?"³

It can thus be seen that the prevalent modern attitude holds that the distinction between these two types of discipline is sharp and significant, even though not absolute. To Professor Urban's question as to how "we have valid knowledge of what ought to be," the usual answer is that we do not and can not. And even those who, like Urban, think that we can and do, find themselves frequently embarrassed in justifying their position, because they have difficulty in stating precisely what it is that such knowledge describes. For the normative sciences are usually conceived to have a subject-matter, a basis in experience, a purpose, a method, and a result that differ utterly in kind from those of the descriptive sciences. So if the latter are right in their procedure, then the former must be wrong. It is this conception that we want to examine.

The source of this disjunction is not difficult to identify. According to the New English Dictionary, the term "normative"³

first came into use at the very beginning of the nineteenth century. This corresponds quite closely with the time at which the Postulate of an Impoverished Reality had spread its pervasive influence over thought and had established its conception of reality as dominant. The essential feature of this doctrine lies in the drastic limitations that it places upon the true content of reality and upon the valid range of experience. The classical world view had discriminated reality into the realm of being and the realm of becoming; or as we would now be more apt to say, into the ideal and the actual. The realm of becoming is conceived as derived from the realm of being, of which it is but an imperfect manifestation; becoming is inferior to being, and can both be and be explained only by reference to the latter; finally, becoming exhibits incompletely purposes, values, and standards that exist in being. This had been for centuries the traditional metaphysics. There corresponded to it an epistemology which held that there were various kinds and degrees of knowledge, coördinate with the levels of the real; that knowledge became more accurate and certain as it approached the realm of being; and that epistemic access to this realm was primarily rationalistic—or sometimes intuitive—rather than empirical, the effectiveness of this latter method being limited in scope and relevant chiefly to the world of becoming.

The basal impact of the new concept of reality is to elevate the realm of becoming to a status of autonomy, such that it can be and be understood wholly in terms of itself. The realm of being is not denied, but it is made largely inconsequential; the referential validity of much of experience is not explicitly revoked, but it is called in question. As I have pointed out in my earlier paper, time transforms these negleets into denials. The realm of being is removed from reality; or, more moderately, it is declared to be inaccessible to knowledge. The emotional, intuitive, and appreciative aspects of experience are asserted to be fraudulent; or, again more moderately, they are labelled unreliable. Kant attempted to limit the impact of this view, and to save, by qualifying, the traditional modes of thought. But his success was purely formal: the most that he could establish was that the realm of being was a logical possibility and an ethical necessity; and modern thought refused to accept either or both of these as equivalent to an ontological existence. The startling success of the new concepts led, by a gradual process, to the identification of the real with the actual, and the relegation of the ideal to a metaphysical limbo.

To justify its contention that the realm of the actual could be inquired into independently, and to guide such inquiry, modern
thought accepted two further postulates: that of the uniformity of nature and that of the causal organization of nature. The effect of these was to confer upon the actual, as its inherent character, what before it had derived from the ideal: order and connection in both space and time. Acting on the basis of these postulates, science was in fact able to discover and describe many uniformities in natural behavior and many regular connections between objects and events in nature. Much of the contents of the actual could be arranged according to type; variations from the type were slight enough to be ignored or causally explained; and the conditions of the type could be defined. Further, many of the events in the actual could be reduced to common patterns; these patterns could be analyzed in detail; and the range of prediction and control was greatly extended. Modern man became convinced that he now had the key to an exhaustive description of nature, and he set bravely about the task of constructing this upon the basis of his materialistic-mechanistic postulates and through the use of his empirical methodology. Anything that slipped through the mesh of such inquiry, or defied reduction to such principles, must by definition be non-existent. Optimism rode high, and progress was thought to be riding hard upon the heels of perfection.

II

But both were riding for a fall. As inquiry into the realm of the actual was carried continually further under the impetus of the new postulates, difficulties began to arise. In certain of its aspects, the actual did not seem to exhibit the character that thought had ascribed to it; and attempts to describe the objects and events within these contexts on the basis of the new principles and in accord with the new methods met with constant disappointment. The crux of this situation can be briefly stated: in the fields of morals, politics, law, esthetics, and society—that is, within the human environment—neither uniformity nor necessity was very apparent.

Rather, men soon came to the conclusion that within these fields the actual exhibited a character that made positive, empirical, and generalized description all but impossible. This character can be summarized in two statements:

First, the complexities of the actual are too glaring.
Second, the discrepancies of the actual are too glaring.

Because of the first of these characteristics, the phenomena within the human context did not afford any easy and effective
generalizations. It was difficult to isolate cause and effect; constant patterns and relations were submerged in a mass of particular variations; laws accurately descriptive of behavior could not readily be discovered; and the ability to predict and control did not advance satisfactorily. Any determinative principles of conduct, law, art, economic forces, and social processes seemed to be absent or at best ineffective. So the tendency grew to banish man from nature, and either to do him the honor of bestowing freedom upon him or to degrade him to being the hapless victim of chance and hazard. In either case, he was largely removed from the grasp of descriptive theory.

Because of the second of these characteristics, the phenomena within the context of the actual simply could not be accepted at their face value. Variations from the type were more prominent than the type itself; or, perhaps more exactly, these variations were so different and so extreme that the type could not be empirically isolated. Further, these variations demanded to be evaluated and criticized. Their significance for life was so great that judgment must be passed upon them and the proper ones selected for encouragement as true representatives of the type.

These two characteristics simply express the fact that in human affairs the specificity of the individual assumes an importance for inquiry that it does not have elsewhere. Of course, the uniqueness of every particular is widely accepted as a principle; but in most fields it can be neglected in practice and even ignored by theory. When attention turns to man, this is not so. Here, individual cases are so complex and variable that it is difficult to discover the precise relation and value to be assigned to causal factors. And the consequences of individual differences are so elaborate and remote that it is difficult to compare and evaluate them. In short, it is awkward to determine either why men behave as they do or how they should be encouraged to behave.

With this realization there came a failure of nerve. In all matters involving such concepts as good, beauty, justice, happiness, legality, economic and political and cultural values, it was noticed that there existed wide discrepancies of judgment and that it was difficult to substantiate any one of these as over against others. Any pretended description of matter-of-fact within the purview of these concepts could be countered by others which contradicted it; and each of these irreconcilable positions could command belief, could support itself by an appeal to data, and could muster theoretic and pragmatic arguments in its behalf. Within the contexts defined by these concepts, mutually exclusive descriptive statements of what is, shared the field among themselves,
and so explanation of the actual in terms of itself came to seem impossible.

Thus, mere descriptions of the matter-of-fact of man's moral, esthetic, political, and economic activities were unsatisfactory. Such descriptions did not adequately clarify their data by referring them to established laws; and, particularly, they did not furnish any certain and definite criteria by reference to which these activities could be pronounced normal or abnormal, healthy or unhealthy, proper or improper. As an escape from this situation, the only recourse seemed to be to project a type or norm, in terms of which actual individual variants could then be both explained and criticized. Since the actual furnished no adequate ground for such a projection, it was possible only within the realm of the ideal. But, by postulation, there is no realm of the ideal. And thus inquiry is ineluctably stymied by its own logic. Such types can not be discovered as existent within the actual. There is no other place for them to exist or be discovered. So they must be constructs, suspect of arbitrariness, relativism, and irrelevance. From this argument, the conclusion is forced that within these contexts explanation is unreliable and criticism is invalid.

It is the acceptance of this conclusion that gives rise to the disjunction of descriptive and normative sciences. The type of knowledge is taken to be that which is positive and empirical in method and which issues in assured generalizations capable of mathematical expression; such bodies of knowledge are designated descriptive. But, as we have seen, there are some contexts in which knowledge can not readily take this form. This disability might be ascribed to a relative failure of human inquiry; or it might be explained on the basis of a difference of degree in the character of the phenomena to be explained. But the prevalent modern tradition—at the levels of both sophistication and common sense—has accepted neither of these paths. It has almost utterly committed itself to one kind of reality and one type of knowledge. Entities which escaped the bounds of an impoverished real were regarded as fictions; and inquiries which involved an appeal to such entities, and which could not be cast into the form and the terms of the accepted exact sciences, were designated normative.

The nature and status of the normative sciences are set by this disjunction. In the contexts we have been discussing, inquiry must appeal beyond the actual. But the actual exhausts the real. This being the case, such inquiry can have no reputable object of its own that has a status in reality; hence the traditional view that
such inquiry deals not with what is but only with what ought-to-be. But that which only ought to be, which has no ground in the actual or in fact, obviously can not be described; hence again the traditional view that such inquiry is forced to construct its objects. But such constructs, being mere human impositions upon the actual, can have no responsible status as natural causes determining natural effects; hence, finally, the traditional view that such inquiry can be only teleological in character, confined to making statements upon the meaning of facts for human experience and upon the purposes that man would like to see realized in nature.

What has occurred here is a loss of faith in the possibility of valid investigation into certain phenomenal fields. To justify this loss of faith, the modern tradition makes a wholesale bifurcation in both nature and experience. And it is in terms of this bifurcation, and only in these terms, that the character ascribed to the normative sciences can receive adequate clarification. To trace in detail the development of this disjunction would require an elaborate argument beyond the scope of the present essay; but at least its essential features can be exhibited, and the various dichotomies that it involves can be pointed out. We can inaugurate our analysis of this bifurcation at the psychological level, which is where in fact it must ultimately be grounded and justified; and can proceed gradually toward the metaphysical level, which is where by hypothesis its ground is usually placed. This procedure does some violence to history, which even in the realm of philosophic growth and succession is rarely systematic; but it has the advantage of exposing cleanly all the various stages of this grandiose dualism, and so of illuminating all the facets of a "normative science."

III

As a preface to this analysis, it will be convenient to list schematically the specific disjunctions on which the general distinction of descriptive and normative sciences is actually based. This will express briefly and synoptically the levels of discourse that are involved and the dichotomies that are categorically introduced on these levels:

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<thead>
<tr>
<th>Type of Inquiry</th>
<th>Descriptive</th>
<th>Normative</th>
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<tbody>
<tr>
<td>Basic Experiential Response</td>
<td>Perception</td>
<td>Feeling</td>
</tr>
<tr>
<td>Conscious Learned Process</td>
<td>Observation</td>
<td>Appreciation</td>
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<tr>
<td>Expert Technique or Method</td>
<td>Measurement</td>
<td>Criticism</td>
</tr>
<tr>
<td>Particular Objects Dealt With</td>
<td>Facts</td>
<td>Values</td>
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<tr>
<td>Unifying Principles Reached</td>
<td>Laws</td>
<td>Norms</td>
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<tr>
<td>Status of These in Reality</td>
<td>Actual</td>
<td>Ideal</td>
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We can now examine these disjunctions in order, stressing those that are the more significant and fundamental.

The first step in this bifurcation is taken when the panorama of human experience is divided between perception on the one hand and feeling or emotion on the other. The meaning given to these two terms is never made too precise; the distinction between them remains always quite vague and blurred; and the sharp differentiation that is here introduced is nowhere explicitly justified. But the general content, the import, and the assumptions of this doctrine stand out emphatically if not distinctly in the body of modern philosophy.

Perception, which is the end product of sensation, is regarded as having a valid objective reference. This is not to say that simple perception is the measure of external existence. Far from it: few of the moderns, whether empiricists or rationalists, are naive realists; they stress the fact that the reports of perception have to be purified in the light of reason. But perception is the result of direct stimulation by external objects; it is largely passive; it holds its contents relatively constant; its mode of operation is highly similar in all men; it is not liable to any great or frequent distortions due to varying subjective conditions; and the physiological manner in which it responds to and conveys sense data can be determined within satisfactory limits. Due to these characteristics, perception can be made to serve as a reputable guide to the order of nature and as a legitimate source of knowledge.4 Thus, Locke refers to the fact that in "perception, the mind is, for the most part, only passive"; and that it is perception that is "the first step and degree towards knowledge, and the inlet of all the materials of it." Descartes likewise asserts "that there is in me a certain passive faculty of perception, that is, of receiving and knowing the ideas of sensible things"; and though the objects given in perception are sometimes obscure and confused, it is nevertheless the case that "all of the sensible things that I conceive clearly and distinctly . . . are truly presented in sense." Considered as an element of experience, perception is thus given a relatively clean bill of health by both empiricist and rationalist: it carries within itself a core of authentic material content; its deception is confined within determinable limits; and so it constitutes an ore from which the real can be recovered by a relatively simple process of intellectual refinement.

The case is quite otherwise with feeling or emotion. As has been already noted, the differentiation of this type of response

4 For the statement of this position, cf. esp. Locke, Essay on the Human Understanding, pt. 2, ch. 9; and Descartes, Meditation VI.
from perception is nowhere fully clarified or justified; but the content and the intent of the distinction are apparent if not precise. Feeling is regarded as having primarily a subjective rather than an objective reference; it thus indicates the character, the attitudes, and the interests of the feeling subject far more than it does the nature and the structure of the object of this feeling. The empiricists, beginning with Locke and Hume, treat of this segment of experience largely in terms of the concepts of "pleasure" and "pain," "agreeable" and "harmful," and of the "sentiments" in general. The rationalists, such as Descartes and Spinoza, speak rather of the "passions" or the "affects." But the attitude is the same in both cases: though "feeling" is a response called forth by stimulation from an external object, the form, the content, and the degree of this response are more largely contributed by the subject than by the object. The emotional aspect of experience, unlike the perceptual, is held to depend upon subjective factors that are indirect, ephemeral, variable, unpredictable, and highly dissimilar among different persons and even for the same person at different times. Consequently, it reflects the response and the attitude of the subject toward the object—the shifting interaction of these two—far more than it does any constant character of the object itself.

This position can be clarified by two brief quotations. Descartes expresses it in these terms:

I notice besides, that the objects which move the senses do not excite diverse passions in us because of all the diversities that are in them [the objects], but only because of the diverse ways in which they may harm or help us, or in general be of some importance to us.\(^5\)

The identical view held on this question by the empiricists is succinctly stated by Hume:

The distinction of moral good and evil is founded on the pleasure or pain, which results from the view of any sentiment or character; and as that pleasure or pain cannot be unknown to the person who feels it, it follows, that there is just so much vice or virtue in any character, as every one places in it, and that 'tis impossible in this particular we can ever be mistaken.

And the following footnote is appended:

This proposition must hold strictly true, with regard to every quality, that is determined merely by sentiment. In what sense we can talk either of a right or wrong taste in morals, eloquence, or beauty, shall be considered afterwards [this promise is not fulfilled]. In the mean time, it may be observed, that there is such an uniformity in the general sentiments of mankind, as to render such questions of but small importance.\(^6\)

\(^5\) Passions of the Soul, art. 52.

We may agree or disagree with the opinion advanced in the closing sentence of the footnote, but the general sense of this doctrine is clear. The emotional segment of experience—"passion" or "sentiment"—is invidiously distinguished from the perceptual segment, and is denied any reliable status as a guide to matter of fact. It is here stated that an object possesses just so much of any quality determined by sentiment as any one "feels," and so places, in it. Hence, one can not possibly be mistaken in his attribution of a certain degree of such a quality to an object; but no more can one be offended by another's disagreement, nor justified in any effort to validate or impose his own conclusion. Since emotion is personal and private, it must follow that statements based upon it are not descriptive of external facts and relations but are mere appraisals of the meaning and importance that a subject finds in certain objects and occasions. The world as revealed to emotion is thus withdrawn from organized public inquiry, and is left to the mercy of unguided "insight" and unverifiable "persuasions."

Philosophers are perforce concerned with knowledge. And from the point of view of knowledge, the modern tradition makes emotion radically distinct from and subordinate to perception. It is held that any implicit objective reference of emotion is hopelessly blurred and distorted by subjective excrescences; reports given in emotion are highly variable, both in space and in time; what uniformity is present depends largely upon custom and tradition; hence, any general conclusions based upon emotion are vitiated by a preponderant element of the arbitrary and the artificial. In a word, modern philosophy has on the whole distinguished emotion from perception on the basis of a deep-seated conviction that emotional data are not fit material for the type of intellectual analysis that can lead to a disclosure of the character of the real. And this conviction is itself controlled by a pre-conception concerning the real objects at which such analysis is to arrive. Perception has been purposefully selected from the body of consciousness and vested with a pre-eminent status in inquiry. And emotion, which is integral with perception in experience, is cast aside as a deceptive interloper.7

I have discussed at such length the bifurcation of experience into perception and feeling because it furnishes the necessary logical foundation upon which is based the whole discrimination of inquiry into descriptive and normative disciplines. The character ascribed to these two elements of consciousness pervades the

7 This thesis is developed at length in Whitehead's Adventures of Ideas, ch. 11.
entire succeeding superstructure of distinctions: thought is here launched upon a certain path, and under the impetus of its own peculiar hybris does but follow this to its inexorable conclusion. The further dichotomies drawn within experience express primarily the consequences of this basic distinction as they occur upon various levels of discourse—though they also reflect back upon it, both reinforcing and qualifying it—and so they can be discussed more summarily.

Perceptual and emotional response are native and untutored—though of course not uncolored by tradition and environment. When man becomes aware of them, and of the values they contain, he cultivates them purposefully. And so there arise the two conscious learned processes of observation and appreciation, based respectively upon perception and feeling. The peculiar quality assigned to each of these, and so the distinction drawn between them, can best be approached through the common meaning they have in our culture. Observation is regarded as a systematic objectifying of experience. It depends upon a purposeful attitude of detachment; it purges away any native interest that man might have in the things that he observes; and so it discovers the inherent character of its objects, uncolored by the bias of the observer. Appreciation, on the other hand, is held to be a systematic subjectifying of experience. It demands an intensification of personal response—a determined effort to exhaust the effects that an object can have upon the experiencer; it requires that its votaries come with every sense sharp and subtle, so that they can surrender to the full stimulus before them; and so it serves to uncover all of the meanings that the appreciator can both receive from and project into an object.

This rather crude distinction is, of course, greatly qualified and refined in the hands of philosophers. Those of a scientific bent have been careful to stress the fact that observation can never escape its basis in experience: it may yearn for the absolute, but it can not achieve it. And those of an esthetic bent have insisted upon the cognitive content of appreciation, which, they say, enables man to explore the inner nature, rather than the mere outer shell, of the world around him. But even at the level of high sophistication the distinction remains—and remains invidious. As a guide to the structure and behavior of the real, observation enjoys a repute far beyond that of appreciation.

This difference becomes both more obvious and more precise at the next level of disjunction, where attention is turned to the expert techniques through which man seeks to grasp and explore his environment. The methods here at issue are those of meas-
urement and criticism: the first being engendered by observation out of perception, the second by appreciation out of feeling. And once again the felt distinction between these two can be concisely stated. Measurement operates within a settled frame of reference; its instruments, its procedures, its scales, and its symbols are highly standardized; its results can be stated with exactitude; and independent verification of its findings can yield such close approximations that discrepancies are assigned to mere “experimental error,” the result of trivial human fallibilities in the application of an essentially infallible method. The case seems to be otherwise with criticism. Critical values are themselves so tenuous and unsettled that nothing can be settled by reference to them; the criteria, the procedures, and the techniques of criticism cause as many disputes as they resolve; and the variations among individual critics are so striking as to foster the belief that in this field idiosyncrasy is ultimate.

This opinion of common sense is again the precipitate of earlier philosophical doctrines that have now become more subtle, but it nevertheless finds its reflection in current philosophical thought. The principle of indeterminacy, the doctrine of rational arbitrariness, and the development of subjective idealism to the contrary notwithstanding, those disciplines that can measure their data are held to be distinct from and superior to those that can not. The man who can measure is thought to mold his results to the contours of reality; starting with data that have an ascertainable objective reference, he has perfected a technique through which he can efface himself from the operations he performs—if not completely, at least with the success of the Cheshire Cat. While the man who can only criticize is forced to deal with elements that are not even open to obvious public inspection and to assess these against values that are not commonly agreed upon. The critic invariably projects himself not only into his work, but even into his data; so his results are colored by the extraneous factors of taste, temperament, and tradition. Here at the level of measurement and criticism, where experience becomes the most articulate, modern thought pretends to find the same radical discrepancies that it has previously read into the primitive and protean body of experience.

IV

The dichotomies that we have so far been discussing are largely epistemological in character. But the consideration of measurement and criticism, with its necessary emphasis upon the results achieved by these activities, has brought us to the border of meta-
physics. The operations of the measurer and the critic represent the specialized refinement and the controlled application of the raw materials given in perception and feeling. At this point, a simple question arises: What are the nature and the status of the entities that are crudely reported in perception and feeling and subtly explored by measurement and criticism? And the answer comes with equal simplicity: We perceive and measure facts; we feel and criticize values.

The statement that this dichotomy of facts and values lies on the borderline between epistemology and metaphysics has two aspects, which are closely related and of equal significance. In the first place, the distinction of fact and value is generated out of considerations that are partly epistemological and partly metaphysical; its character is fashioned by these sometimes diverse demands, so that it exhibits inner tensions which constantly threaten to dissolve into inconsistencies. In the second place, this distinction serves as the medium of transition through which metaphysical and epistemological arguments rally mutually to the support of one another; this is the focal point at which a doctrine of reality is bolstered by subjective evidence and a doctrine of experience is bolstered by objective evidence.

This distinction drawn between facts and values clearly manifests this duality that underlies its origin and its use. The factual is regarded as that which is independent of human experience; facts are objective, and they retain their inherent existence and character in the face of the most diverse subjective attitudes toward them. A fact is what it is, defined only in relation to the total body of fact, and human neglect and human interest are alike unable to modify it. Since this is their mode of existence, facts enter consciousness as the result of discovery. They are "found" through the process of inquiry and "established" through the process of proof; but neither of these operations contributes anything to the reality or the character of the facts it discovers. Of course, they may distort or even falsify; but the fact still retains its own true being, and it is only our acquaintance with the fact that suffers. Finally, a statement of fact—a "descriptive judgment"—is a reference to what is, a report on an actual state-of-affairs; and it can be validated by an empirical or pragmatic procedure that is capable of independent verification at some other time by some other party. In short, facts belong to the objective order; and their entry into the subjective order leaves them essentially untouched. Their discovery is a temporal occurrence that is important to man but indifferent to fact.
It is impossible to formulate any simple doctrine of the nature and status of values that would be generally accepted; the disputes between objectivists, subjectivists, and relationalists are too intense to permit of this. But it is possible to state a generally prevalent attitude toward values; though no school would acknowledge this attitude as exactly its own, yet all are colored to some degree by its influence. The valuable, as distinguished from the factual, is held to depend largely upon human experience; values are subjective, and their existence and character are conditioned by human perspectives. Nature is neutral with respect to values, and so it is not the case that natural phenomena are good or beautiful or just. It is men who confer value upon nature; and they do this because and when they take some interest or find some satisfaction in certain aspects of the natural environment. Values, then, are created rather than discovered: they are "found" in the act of desire and "established" by their success in satisfying desire. What is desired and what does satisfy depend upon various and variable internal factors, so the locus of value is different and ultimate for each individual. Finally, a statement of value—a "normative judgment"—is a reference to what ought-to-be; it is the report of a personal preference, and its range of validity is limited to spontaneous agreement that is far from complete, often contradictory, and beyond the reach of proof or persuasion. In short, values belong to the subjective order, and their projection into the objective order is by a private act which gives them no public status and so no claim to coercive authority over other men.

I do not maintain that this doctrine of value is either consistent or cogent. It is not. Hence, it would not be acknowledged by any school of thought. But despite this, I do not think that I am setting up a mere man of straw, created only to be destroyed. For I do maintain that this doctrine expresses the general attitude toward value, as distinguished from fact, that is held at least implicitly by most schools of thought; and, particularly, that its influence pervades all of the so-called "value sciences." Any statement about values must of necessity fall into one of two types: it is either a statement about that which should but does not actually exist; or it is a statement that some actual things have a better right to exist than do other things. In either case, there appears to be a necessary appeal beyond the realm of actual existence. Facts within the contexts of religion, morals, society, and art demand criticism and hierarchical classification. But the facts themselves do not furnish a valid ground for such treatment. So there must be a reference beyond the facts, to other entities which
can supply this ground. These entities are called "values." It then becomes necessary to assign a locus and status to these values. This is not found in the realm of objective "fact." There is no other objective realm. So "values" must be subjectively grounded. Finally, the only subjective ground available is the actual individual human being. Each such individual is an ultimate and independent private agent. So values are entirely dependent upon and are relevant only for the person who enunciates them. The logic of this complex argument is irrefutable. (The truth of several of its crucial premises is quite another matter; but this is not the place to discuss that point.) And it dictates the modern position that man projects value into nature: the valuable is that which functions in arousing and satisfying desire.

This doctrine finds such simple and simplistic expression in Hume that the passage where he states it deserves to be considered in full. Hume has been arguing at length that morality does not consist in any external relations that are objects of rational discovery; he sums up his argument in this way:

Nor does this reasoning only prove, that morality consists not in any relations, that are objects of science; but if examined, will prove with equal certainty, that it consists not in any matter of fact, which can be discovered by the understanding. This is the second part of our argument; and if it can be made evident, we may conclude, that morality is not an object of reason. But can there be any difficulty in proving, that vice and virtue are not matters of fact, whose existence we can infer from reason? Take any action allowed to be vicious: Wilful murder, for instance. Examine it in all lights, and see if you can find that matter of fact, or real existence, which you call vice. In which-ever way you take it, you find only certain passions, motives, volitions, and thoughts. There is no other matter of fact in the case. The vice entirely escapes you, as long as you consider the object. You can never find it, till you turn your reflection into your own breast, and find a sentiment of disapprobation, which arises in you, towards this action. Here is a matter of fact; but 'tis the object of feeling, not of reason. It lies in yourself, not in the object. So that when you pronounce any action or character to be vicious, you mean nothing, but that from the constitution of your nature you have a feeling or sentiment of blame from the contemplation of it. Vice and virtue, therefore, may be compared to sounds, colours, heat and cold, which, according to modern philosophy, are not qualities in objects, but perceptions in the mind.8

I agree with Hume that this passage does state the nature of facts and values "according to modern philosophy." In much of modern thought, this position is asserted confidently and categorically; elsewhere, though it is explicitly denied, the admission that values are not facts, and the hesitancy in saying what they are, constitute a virtual acknowledgment of it; and those few schools

that have taken a firm stand against it have had little effect because they have of necessity appealed beyond the permissive limits set by metaphysical and epistemological dogma. Facts are persistently regarded as being objective, orderly, public, and coercive: they exist as an external system, and they are available to inquiry whose results they in turn control. Values, in contrast, are held to be subjective, arbitrary, private, and relative: they depend upon the shifting tide of internal response, and are the expression of personal opinion which can speak only for itself.

As I have indicated, the distinction of facts and values is the channel through which objective and subjective data are able to mingle with and reinforce one another. If we ask why facts are open to perception and measurement while values can only be realized through feeling and criticism, we are told that this is because they are different orders of reality. And if we then ask how it is known that they are different orders of reality, this position is justified by pointing out that facts can be perceived and measured while values can only be felt and criticized. When the metaphysical status of these supposedly diverse elements is called in question, it is established by an appeal to epistemological data; and vice versa. So that a distinction which is internally quite weak, and open to many familiar criticisms, has become settled only because it can shift terrain at will, and can thus avoid logical defeat by constantly changing the body of data with which it defends itself. Like so many human divorces, this theoretical one has no real reason which produced and justifies it; it is but the tragic result of circumstances that in themselves are accidental and inconsequential. Here, as there, a living unity is destroyed because isolated trifles gradually assume an air of meaningful connectedness.

It is for this reason that this distinction is crucial to the whole bifurcation that we are discussing. It sums up the scissions already worked within the body of experience; it asserts a drastic rupture in the phenomenal characteristics of objects—that is, upon the surface of the world as known; and it demands and determines corresponding scissions within the body of nature. We have examined the first two of these three large fields; the third can now be considered more briefly, as its character is largely foreshadowed by the central distinction of fact and value. The dichotomy that now demands attention is that which divides unifying principles into laws and norms.

There have been in the past, and there are still prevalent today, several main doctrines concerning the laws of nature: such laws may be regarded as really immanent within nature, as ob-
jectively imposed upon nature, as derivative from and expressive of more basic relations in nature, or as subjectively imposed upon nature. There are important differences among these interpretations, but they do not affect the present inquiry. For these doctrines all agree, after their various fashions, that laws enunciate observed correlations of fact within nature; they all regard laws as referring to a regularity of natural behavior that is real and reliable; they all recognize that laws bear such a relation to nature as to be effective guides to action and coercive upon opinion. The doctrine of law as conventionalized interpretation is only an apparent exception; for it too holds that law satisfies the above conditions, and differs only in the reasons it gives as to why this is the case. Throughout the modern tradition, laws are treated as descriptions of the orderly processes and results with which nature confronts reason. They have an effective objective reference, and describe the states of affairs, the relations, and the progressions of events that man finds in the external world.

A law, then, is regarded as a generalization or a summation which states the conditions that do actually hold among existent and observable matters of fact. Such laws, when analyzed, can be seen to take, on the whole, one of two forms. They may state constant cause and effect—or, more vaguely, temporal—relations between objects and events: such would be the laws of motion, valence, growth, health, learning, rural-urban migration, good and bad money, etc. Or they may state a general condition to which all individual cases of a particular type are found to approximate: such would be the laws of equilibrium, chemical solution, stratification, anatomy, stimuli reaction, intelligence, criminal types, prosperity, etc. Of course, this difference of form is not absolute and exclusive: any law which finds its simplest and most natural expression in one of these forms could certainly be translated adequately into the other. Relations, reactions, and events spring out of conditions holding among their constituents; and these conditions in turn depend upon elements standing in certain relations. So laws of both these forms have the same general characteristics: they refer to the realm of what is, and they describe this in terms of its actual modes of existence.

The concept of "norm" is covered with such obscurity—theoretical, emotional, and verbal—that it is virtually impossible to say what a norm is, and even very difficult to say what it is not. The reasons for this I have discussed earlier in this paper, and shall return to shortly. But it is first necessary to isolate the core of vague but intense meaning that animates the term. Approached negatively, there is wide agreement that a norm is more
than an account of matter of fact, and different from a description of what actually is. A norm does not, as does a law, merely describe the conditions and the relations that hold within nature. But what is the additional element that so radically differentiates norms from laws? Explanation now becomes more hesitant, but a general intention can still be discriminated. A norm reaches beyond the discovery of fact, and seeks to impose direction and limits upon facts. The language of various schools is rather divergent at this point: norms refer to standards, they are ideal patterns, they state what ought to be, they are constructs, they are legislative, their relation to fact is teleological rather than descriptive. But these several tongues contain a common meaning: norms are fundamentally different from laws because they do not and can not confine themselves to reporting what is actually the case within their fields of fact. They can not rest content with actual happenings and actual conditions. They insistently say that what is should not be, and just as insistently they state what should be.

This distinction of law and norm is certainly the most uncomfortable and embarrassing item within the modern bifurcation of nature and experience. The reason for this is easily found. As soon as the distinction is pressed, it leads to two equally unpleasant conclusions. First, if a norm is a mere teleological construct with no justification in described fact, then it is an empty vessel, a statement of arrogance and intolerance. The logic of this position is simple and attractive; but its implications—theoretical, factual, and pragmatic—are so confused and dangerous that it is freely and willingly accepted by none save sceptics. Second, if a norm does have a real ground in described fact, if it simply expresses generalizations and summations that can not presently be exactly stated nor adequately confirmed, then it has essentially the same status as a law, from which it differs only in degree. The details and the consequences of this position require a fuller and more careful statement than do those of scepticism. Empirically and pragmatically it is more appealing. Its advantages for practice are obvious and familiar: it justifies evaluation and control. Also, and less obviously, it does seem more pertinent to the facts. A close analysis of laws and norms reveals no radical differences between them. When we examine the "norms" of, say, ethics and aesthetics, we see at once that they fall into the two familiar forms discussed above: just as do the "laws" of, say, physics and physiology, they attempt to state constant relations and to discriminate general types. Admittedly "norms" do this less exactly than do "laws"; and "norms," more obviously than "laws,"
are instruments for the critical selection and the purposeful control of facts. But empirically the differences are not drastic. So from both the pragmatic and the empirical points of view, there is an impetus to accept this status of norms and to treat them with respect. However, a theoretical difficulty now arises. Norms do seem to assert a knowledge that can not be explained solely by reference to facts; they do seem to entail some further source from which they derive their pretended authority over the actually existent. The essence of the matter can be most simply stated in this way: norms spurn the democratic method; they refuse to abide by decisions enunciated by factual majorities; they insist that what is actually less prevalent, or even actually non-existent, take precedence over what is presently the case. In short, norms do seem to go beyond fact in order to assert value.

There is nothing inherently absurd or even surprising in such an effort. Men make it constantly: they select and encourage certain mechanical systems, certain structural relations, certain crop types, certain animal breeds, certain standards and rules of health, certain educational aims and methods, certain social reforms, etc. The list could be prolonged indefinitely. All of these cases obviously entail an appeal to principles which govern selection and regulation. When this is pointed out, and it is asked what distinguishes such "principles," which are freely used, from "norms," which are widely scorned, modernity has a ready answer: in these cases, selection is based on arbitrary human preference and regulation precipitates out of controlled experiment. In short, when these principles "go beyond fact," their destination is apparent and is still "within fact": they go to existent human wish and will. And then comes the inevitable and triumphant question: can you and will you say the same for norms? You will not, for that is to embrace scepticism and relativism. And yet you must: for where else can norms go?

That is the crux of the matter. Norms do go beyond the objective existent facts to which they refer. It is not satisfactory to have them go simply to subjective existent facts. But where else is there? It is this dilemma which drives modern thought to the theoretical acceptance of a scepticism which both empirical and practical considerations lead it to avoid. Laws—and other principles—can be justified because they can be adequately derived and established by reference to some body of real and verifiable existents. Norms remain unjustified and unjustifiable because their content and their claims can not be exhausted by reference to any such existents. This contention brings us to the last level of bifurcation, the last stage of our journey in analysis; and
it brings us quite simply back to the point from which we started. "In my end is my beginning."

The distinction that is now made is quite openly metaphysical, and consists in segregating reality into the realms of the actual and the ideal. Since we have of necessity already examined these in some detail in accounting for the genesis of normative sciences, we need now touch upon them but briefly. The actual is the realm of existent fact, of particulars enmeshed in space and time; it is the world of matter and motion, and of the order and connection that reside within this world. It is physical in character, limited in extent, and the entities within it are governed by necessity. In short, the actual at least approximates to the classical realm of becoming and to the early moderns' attribute of extension.

By contrast, the ideal is—why, the ideal is the—well, the ideal is what the actual ought to be but is not. And that is virtually the only meaningful and consistent statement that the modern tradition can make about the ideal. Of course, it can be described, and explained, and even eulogized. The realm of the ideal is spiritual in character; it is infinite and eternal; it is pure thought; it exhibits freedom; it is the end toward which all is directed; it is the locus of values; it contains pure Being; it is absolute, and good, and God. But all of this is mere eulogy. For the realm of the ideal is deprived of existence, and is banished from the halls of reality. One imagines that the ideal would prefer to be described in a manner which, if less laudatory, were also more significant. It might reasonably be explained in terms of potentiality; accepted as that which is really implicit within real actuals; characterized by reference to principles which are inherent in the real and which define the purposes toward which actuality tends. Yet this is not and can not be done. Since the actual exhausts the real (by postulate), and the ideal is other than the actual (self-evidently), then the ideal must be unreal.

A distinction as basic and significant as this can obviously not be supported merely by postulation and the plea of self-evidence. The sharply conflicting positions here assigned to the actual and the ideal must be justified by reference to both theory and data. And the modern tradition has such a justification. This consists of an elaborate appeal to many levels of discourse: the different explanatory powers of descriptive and normative principles; the varying objectivity of primary, secondary, and tertiary qualities; the great discrepancy in the precision and certitude of observational and critical methods. But this whole appeal rests finally upon a basic psychological discrimination within immediate ex-
perience. So we must turn now to the fundamental split between perception and feeling as experiential elements.

But no. Our journey has now come full cycle, and it is time to call a halt. There is no ready and easy point at which we can draw to a logical stop, can summarize, and can then designate succinctly the character of the entity we have been studying. The distinction between descriptive and normative sciences is the entire bifurcation that we have analyzed so laboriously as it appears in so many specific guises. One whole series of terms expresses the basis in experience, the procedures, the methods, the subject-matter, the result, and the destination of what is regarded as valid inquiry into the actually existent; the other series does the same for what is regarded as unverifiable conjecture about what ought to be. The former type of inquiry is descriptive, the latter type is normative, and the total difference is the sum of the distinctions we have examined. Similarly, the concept itself of a normative science can be defined only additively, by reference to the spectrum of terms running from the emotional aspect of experience to the ideal aspect of reality. For, as we can now see, the concept has no essence; it is a series of assumptions which mutually support and supplement each other. The doctrine has no center-pole, no keystone, but is a circle closed against argument and evidence save such as can be drawn from within itself. This being the case, our only summation can be a retrospect. "In my beginning is my end."

V

It remains only to examine briefly the practical consequences that have flowed from the acceptance of this concept of the normative sciences, and to stress once again the theoretical inadequacy of the concept itself. With respect to the first point, these consequences are so obvious logically and so familiar historically that they need little comment. If man is to deal effectively with any part of his environment, a double knowledge is required: first, of the structure of fact itself, and second, of the significance of fact for human life and purposes. The classical tradition might express this truth in terms of the realm of being and the realm of becoming; a later tradition expressed it when it spoke of the content of the ideal and the mechanism of the actual; the modern tradition expresses it by reference to ends and means. This double knowledge is necessarily involved in all of the contexts of inquiry, from physics to politics. In some of these fields, ends or ideals may seem so obvious as to escape criticism or so self-evident as to require no explicit determination. But to adopt this attitude
toward them is both deceptive and dangerous. Such concepts are always present, whether men are building bridges, writing sermons, painting pictures, or making laws. Being present, they color implicitly even the search for ideas; and they clearly obtrude themselves when there is any effort to make ideas effective. This being the case, it is best to acknowledge them and to seek to refine them.

But once the doctrine of the normative sciences is well established, it has this result: with respect to certain bodies of data—certain aspects of the environment—it virtually affirms the impossibility of accurately knowing either the mechanism of the actual or the content of the ideal. The effect of this is seriously to inhibit inquiry into these fields. Speculation is discouraged because it is held to lack both a foundation in fact and a destination in ideals; so that the values men accept—since they must have values—are romantic and emotional anachronisms, innocent of any critical analysis. Research becomes timid, and does little but repeat with spurious exactness what is already familiar to common sense. Finally, authority has no standing, because there is no faith in any ground for expertizing; so that men are justified in that abomination, "I don't know anything about it, but I know what I like." In short, the doctrine of the normative sciences breeds a defeatist attitude toward a knowledge of means and a nihilistic attitude toward a knowledge of ends.

There is ample evidence that contemporary philosophy is becoming increasingly dissatisfied with the sharp distinction drawn between descriptive and normative inquiries. On the theoretical side, thought seems to be content with no one of the specific disjunctions analyzed above; and systematic doctrines grow more and more subtle in their efforts to make a distinction but to keep it within reasonable bounds. On the practical side, the consequences that I have briefly indicated have been widely recognized, and various steps have been suggested by which they can be alleviated. From both of these directions, the impetus is clearly toward an interpretation of nature and experience that will honor their integrality and will thus prevent some elements within them from achieving a dominance that is tyrannical and intolerant. Men want and need to find their world cohesive.

To accomplish this, philosophers must dissolve what have been held to be differences of kind into what are truly differences of degree. The modern tradition has led men to emphasize two extreme aspects of a continuum and to reject the connection between these. In fact, this connection can be established in each of the
dichotomies that I have analyzed. This movement, springing from both logical and practical considerations, is impeded only by the tenuous but tenacious belief that it is theoretically impossible to consummate it.

And on what does this belief rest? It has been the whole argument of this paper that it rests on a chain of disjunctions, each link of which is weak, but which reinforce one another mutually, so as to give to the whole a specious plausibility. For this chain is unique in being far stronger than its weakest link; it has the strength of all of its links taken together. The reason for this is simple: the weakness of no one disjunction can be exhibited, because the argument retreats circularly from one level of discourse to another. Like an impoverished family, having exhausted its resources it exploits its connections.

Consequently, the distinction of descriptive and normative sciences can be attacked only on a grand scale. But when approached with a fullness of view, with a realization of the inter-dependence of its constituent dichotomies, I think that it crumbles quickly. For the meaning given to each of these dichotomies is determined by the same set of vaguely defined but firmly held metaphysical and epistemological assumptions. These hidden and confused assumptions, which refuse to stand up to inspection in any single guise, posit broad bifurcations in nature and experience, and so create and maintain the specific chasms that rend modern thought. The preceding analysis should suggest that these chasms are similar to the moats and battlements of those castles in the sand from which children wage such realistic mock battle; they exist only by the inspired fiat of a leader and the determined acquiescence of all concerned.

Yale University

IREDELL JENKINS

9 These three sentences are obviously the bare statement of a thesis which requires to be elaborated and defended. Such elaboration is beyond the scope of the present discussion, but I hope to be able to state it in detail in a later paper.