

## IS/UGHT: A RISKY RELATIONSHIP BETWEEN THEOLOGY AND SCIENCE

by Philip Hefner

The venerable problem of relating “is” and “ought” is that of reconciling our sense of what is to be valued and what is to be done (on the basis of what is valued) with the way things really are, with what we believe to be the objective character of reality. The identity of is and ought, of description and evaluation, or even the easy transition from one to the other has been challenged strongly by philosophers and theologians in the past two hundred and fifty years on various grounds. The most important reasons given for insisting on the discrepancy between is and ought are (1) that there is no evaluation possible which does not include an element of personal preference or bias, and therefore it cannot claim to be pure description, and (2) that simply to describe something is not to command or to render it an ought. The logic of these objections to a direct move from is to ought has been amply set forth in British and American philosophy since 1900, while existentialists have described the tension within the human spirit that results from the basic gulf between what we know is objectively true and the will to act in accordance with that truth.

In some circles it seems to be agreed that the dualism between is and ought is a dogma so firmly attested that it merits no further discussion. Efforts to reassess the relation between is and ought and to negotiate a transition from the one to the other are dismissed very simply as the “naturalistic fallacy,” with a ritualistic reference to David Hume’s *Treatise of Human Nature* and G. E. Moore’s *Principia Ethica*. The state of things in this regard is not so simple, however. There seems to be a basic human sense that human knowledge and existence should be in touch with and live in accord with “the way things really

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are." There is a natural tendency not only to refer our knowledge and our action to "the way things really are" but to insist as well that knowledge and action be in harmony with the way things are.

This basic human tendency is spelled out on grounds that are scientific, philosophical, and theological. The scientific understanding views human beings as "part of the world of nature, of the world of natural living things: they share the characteristics common to other elements of the physical and biological universe and are affected by the characteristics of the whole natural system of which they are members."<sup>1</sup> The implications of this view are obvious—human beings must know the objective nature of the universe as fully and as clearly as possible; they must avail themselves of objective scientific information about the universe to which they belong. Further, they must live as fully as possible in accord with the world as they understand it. Such scientific considerations have sunk deeply into the consciousness of the race, and they provide compelling reasons to insist that our oughts be in touch with what really is. Our best, most objective knowledge of the world tells us that we are a part of the world system (that constitutes an objective "is") and that same knowledge illumines for us the natural requirements for us to conform to the world of which we are a part (that constitutes an objective "ought").

Despite the considerable philosophical literature that underscores a supposedly irresolvable dichotomy between is and ought, the tradition of Western philosophy is even more impressive in its concern for the unity of the two. We may go back to Aristotle's definition of the end of human beings as happiness, or flourishing. Thereby he used as criterion not only a category that is open to empirical means of description (the is) but also one that drives into the empirical realm to describe objectively what it is that sustains happiness or flourishing (the ought). Thomas Aquinas develops this view in a natural law doctrine. Spinoza also developed natural law theory, writing: "*Good is that which all things seek after. Hence this is the first precept of law, good is to be done and promoted, and evil is to be avoided. All other precepts of the natural law are based upon this. . . .*"<sup>2</sup>

The Kantian and existentialist traditions notwithstanding, modern philosophy continues to argue strongly for relating fact and value very closely. The Hegelian tradition, with its Marxist offspring, has insisted that the ought is the dialectical fulfillment of what is—the tension between the two constituting not an impassable chasm but rather an instance of the negation process which is itself the unfolding of what is.

British analytic philosophy, together with its American practitioners, has produced an impressive amount of energy on the is/ought

question, out of which has come a discernible stream of thinkers who insist that the two belong together, that the transition from is to ought can indeed be negotiated by logical inference and deduction. To mention the names of Alisdair MacIntyre, Geoffrey Hunter, Max Black, G. E. M. Anscombe, Philippa Foot, Mary Midgley, John R. Searle, and the like is to indicate the breadth of this stream of current thought.<sup>3</sup> It is perhaps more telling to mention the names of R. M. Hare and William Frankena, firm defenders of nonnaturalist moral philosophy, who nevertheless insist that although it may not be (in Frankena's words) strictly "according to *logical* Hoyle" to move from is to ought, it is certainly rational to do so.<sup>4</sup> And both men pick up an argument not dissimilar from Aristotle's. Hare writes: "... most of us have a high regard for our survival, ... and our pro-attitudes are fairly consistently related to these." He concludes from this that evaluative (ought) words do indeed have descriptive (is) meanings.<sup>5</sup> Later in this discussion I shall return to these philosophers.

The Christian theological ground for the basic human tendency to hold is and ought together may be stated very simply: God is the creator and sustainer of all reality, and he holds things together in the patterns of meaning which he has created. Being and obligation, is and ought, fact and value—all therefore have their origin and meaning in the same God. The foundational ought is always "Become what you are!" ("*Sei was Du bist!*"). And what we are is the creation of God. To be in relationship to God is in fact to be in conformity with the "way things really are," despite any appearances to the contrary.

#### THE IS/UGHT LEAP IN SCIENCE, PHILOSOPHY, AND THEOLOGY

I have asserted that the transition from is to ought is a natural one for humans since it is a deeply embedded conviction that the transition can and must be made. I also suggested that there are significant supporting beliefs for this conviction arising from science, philosophy, and Christian theology. Now I want to turn to each of these latter three—science, philosophy, and theology—and describe in more detail just how I understand their basic argument in moving from is to ought.

*The "Biologization" of Ethics.* We take our subtitle from the leading theoretician of the emerging science called sociobiology, Edward O. Wilson.<sup>6</sup> Sociobiology is defined as the "systematic study of the biological basis of all social behavior."<sup>7</sup> When I speak of science in this paper, I refer to this one science. I focus on this one science because I believe that it is the most sophisticated hard science that deals with

animal and human behavior. It is the paradigmatic science that is relevant to the discussion of the is/ought relation because of its striking (and even outrageous) claims to have related the most important activity of the human spirit to underlying observable dynamics of the evolutionary process. Even though it is a young enterprise and stands at the center of a vigorous controversy in which its credibility as science is regularly challenged, its thrust is fairly clear, and it has already received substantial, if critical, support in the philosophical community.<sup>8</sup>

Several citations from Wilson may set the stage for understanding how sociobiology negotiates (according to its own canons) the transition from is to ought:

Scientists and humanists should consider together the possibility that the time has come for ethics to be removed temporarily from the hands of the philosophers and biologized.<sup>9</sup>

Even if the problem were solved tomorrow [the problem of elaborating the developmental-genetic basis of Lawrence Kohlberg's theory of the stages of the development of moral judgment], however, an important piece would still be missing. This is the *genetic evolution of ethics*. In the first chapter of this book I argued that ethical philosophers intuit the deontological canons of morality by consulting the emotive centers of their own hypothalamic-limbic system. . . . Only by interpreting the activity of the emotive centers as a biological adaptation can the meaning of the canons be deciphered.<sup>10</sup>

. . . innate sensors and motivators exist in the brain that deeply and unconsciously affect our ethical premises; from these roots, morality evolved as instinct. If that perception is correct, science may soon be in a position to investigate the very origin and meaning of human values, from which all ethical pronouncements and much of the political practice flow. Philosophers themselves, most of whom lack an evolutionary perspective, have not devoted much time to the problem. They examine the precepts of ethical systems with reference to their consequences and not their origins. Like everyone else, philosophers measure their personal emotional responses to various alternatives as though consulting a hidden oracle. That oracle resides in the deep emotional centers of the brain, most probably within the limbic system, a complex array of neurons and hormone-secreting cells located just beneath the "thinking" portion of the cerebral cortex. Human emotional responses and the more general ethical practices based on them have been programmed to a substantial degree by natural selection over thousands of generations. The challenge to science is to measure the tightness of the constraints caused by the programming, to find their source in the brain, and to decode their significance through the reconstruction of the evolutionary history of the mind. . . . Success will generate the . . . dilemma, which can be stated as follows: Which of the sensors and motivators should be obeyed and which ones might better be curtailed or sublimated?<sup>11</sup>

These quotations set forth with some force the sociobiological move from is to ought. Human behavior is genetically conditioned, and that

behavior includes the activity of the human spirit refined through the process of natural selection as it engages in ethical reflection. Science can lay bare the dynamics and the structure of this behavior, including in its descriptions the interplay between conditionedness and freedom, that is, the degree to which parameters have been prescribed for the behavior as well as the extent to which that behavior can exert itself on the basis of its own assessments and decisions.

The is which the sociobiologist examines possesses within itself, in other words, a very profound dimension of oughts. The evolutionary record itself exhibits the oughts which have been chosen in the past. Furthermore, the sensitivity to the question of decision and ought is itself an element of the is which the scientist describes, and the particular ought is itself an emergent from the selection process which reinforces the ought decisions which have been the most adaptive. Intrinsic to the isness of the evolutionary process is the activity of perceiving oughts and conforming to them! Against this background we can understand why for these scientists it is genuinely baffling to speak of a dichotomy between is and ought, let alone an unbridgeable chasm.

*The Central Problem in Moral Philosophy.* Just as I focused upon sociobiology as the representative of the sciences, so I choose to restrict the discussion of philosophy to certain mainstream figures in the is/ought discussion in Britain and the United States—recognizing full well that this stream of philosophical thought does not, by the very nature of the discipline, enjoy even the consensus of affirmation among philosophers that sociobiology enjoys in the scientific community.

There are a number of distinctly different arguments advanced by philosophers who are working to show the unity between is and ought. Perhaps the most widely shared argument is that which identifies oughts as the propensities that correspond to basic human needs. The bridge between is and ought consists in the fact that the oughts are values that arise in response to the needs which occur objectively in human nature. The needs are the descriptive, the oughts the evaluative elements.

That Anscombe, Foot, Midgley, Hunter, and MacIntyre advance the argument that is corresponds to the needs to which our oughts correlate may be no surprise since they resist throughout the separation of is and ought.<sup>12</sup> More striking perhaps is the appearance of Hare, Frankena, and Alan Gewirth among this number.<sup>13</sup> The larger galaxy of names represents a line which argues that it is possible to

move according to rules of logic from is to ought. The logical move is possible, flying in the face of the often reiterated maxim that "no set of descriptive statements can entail an evaluative statement without the addition of at least one evaluative premise" simply because the needs which cry out for value-motivated response are themselves the initial premise of the argument.<sup>14</sup> The demand for the ought is intrinsic to the need analytically and not added unto it synthetically.

Hare and Frankena take exception to the suggestion that the distance between is and ought can be traversed with logic. Hare writes: "... most of us have a high regard for our survival, and for such other things as I have mentioned, and our pro-attitudes are fairly consistently related to these. *It is not, indeed, logically necessary that they would be.*"<sup>15</sup> Given this proviso, Hare admits in one of his more recent discussions of this question that he has in fact provided an example of an "is-ought derivation" but one that does admit of exceptions.<sup>16</sup> Frankena sets forth a clear distinction between logicity and rationality. One moves from is to ought by the latter. He writes: "... when a piece of practical reasoning seems reasonable and justified, there is present both a factual premise or reason and something that may be called an attitude, interest, or point of view. . . . One may rationally and justifiably, at least in principle, proceed to a normative conclusion, even if the inference is not according to *logical* Hoyle. . . . Normative discourse just *is* the appropriate discourse in which to express oneself when one is taking some conative point of view and apprehends facts relevant to it."<sup>17</sup>

Gewirth asserts structure of oughts which are more than contingent or hypothetical because they "logically must be granted by all agents, on pain of contradiction."<sup>18</sup> Hence these oughts have "an absolute status, since their validity is logically ineluctable within the whole context of their possible application."<sup>19</sup> They are not contingent on the agent's self-interested desires or on social institutions but rather on logic. This I take to be an is-ought derivation that stands in a sort of first-cousin relationship to Foot, Anscombe, Midgley, et al., in that it argues from facts to values according to logic, but the facts may be called needs only in a special sense, namely, in that they are pre-requisites to action by agents.

Consonant with the argument from needs is that of Searle, in which he introduces the concept of "institutionalized facts."<sup>20</sup> The oughts or values are not intrinsic to human existence as needs but rather intrinsic to the context or "institution" in which words are spoken and actions undertaken. Thus, in his example of promising, Searle argues that ought or value is intrinsic to the rules of the game in which

promises are uttered and not necessarily in the preferences of the one who makes the promise. One is born into the game, so to speak, and therefore no particular decision is required in order for one to play the game and adhere to its basic values.

One of the most helpful recent philosophical moves from is to ought comes from Arthur J. Dyck, who has utilized the work of phenomenologists in philosophy and psychology.<sup>21</sup> Dyck argues that ought, which he calls "moral requiredness," is given with percepts. The structure of the ought or requiredness is a "gap-induced requiredness." Examples of such requiredness in nonmoral contexts are an unfinished melody or a defective sentence. Given with our factual experience are the incompleteness of the melody or sentence and also the sense that completion is required. Moral requiredness is a gap which we feel compels us to act so as to fill the gap in order to improve the situation. A claim is made upon us in the moral experience in which we feel a duty or obligation to fill the gap.

Dyck sets down several criteria which the experience of gap-induced requiredness must fulfill: The requiredness must appear to be a true gap from an impersonal point of view; it must be an invariant gap, that is, one that would appear to any person in the same situation; it must, finally, demand that the self will an action of gap closing—that is, it must be a genuine performative.

Dyck responds to the question how one determines that the experience of gap-induced requiredness is veridical rather than illusory with the assertion by the phenomenologists that there is a given sense of fittingness in the experience which reveals an objective rightness of the gap-closing act.<sup>22</sup> The work of the phenomenologists suggests that relativism in moral perception is relatively rare since most variations in perspective are actually due to the fact that different experiences are received. The psychological research data, Dyck argues, do not support the conclusion that in fully identical situations persons arrive at differing moral judgments. Rather the data suggest that there is a tremendous variability in situations, with each small variation influencing the experience of gap-induced requiredness.<sup>23</sup>

A fourth group of philosophers may be identified as scientifically based philosophers such as Stephen C. Pepper, May Leavenworth, and Abraham Edel.<sup>24</sup> These thinkers argue very much like Wilson, as I summarized his assertions. Values or oughts are adaptive responses to human needs which are correlated to the demands of the environment. Objective scientific description not only reveals values therefore in its descriptions but also contributes information about the strategies that will best meet those needs. These thinkers argue that

the is/ought dichotomy rests upon a presupposed "set-apartness" of the human being against its environment. Edell specifically charges Bertrand Russell with this assumption that the "self is outside of, and apart from, the causally determined natural universe."<sup>25</sup> Edell and Leavenworth vigorously reject this view of the self. Not dissimilarly from Anscombe, they insist that biological, psychological, and sociological facts about the human evaluator and the environment are relevant to the evaluative judgment. The human evaluator is part of the world, not alienated from it.

The common thread running through all these philosophical arguments is the insistence that the givenness of human experience is not adequately described by the sort of fact/value dichotomy suggested by Moore. Nor is the naturalistic fallacy which Moore described a helpful concept in considering that experience. A wholistic, nondualistic concept of human beings in interrelationship with the world, their experience, and their judgment stands as the common emphasis of these philosophical schools.

*Is and Ought Unified in the Symbol.* We have spoken of the persisting human concern for the unity of our values with "the way things really are." Religions (and here I am speaking of Christianity first of all and of Judaism as well) manifest this concern in their symbols. The symbol, as it has often been observed, performs three operations, all of which are necessary if the symbol is to be successful in its own terms: It brings to awareness an event of meaning; it projects that meaning into the objective realm, thereby identifying it with the "way things are"; it provides an image of activity which, if carried through, brings the agent into harmony with that objective order of meaning.<sup>26</sup>

By virtue of its very nature the religious symbol claims to be the unity of is and ought. The symbol qualifies as the is since it represents the true or ultimate character and meaning of "the way things really are." The second operation I just mentioned, namely, that of objectivizing the event of meaning that transpires in the symbol's coming to expression, by definition grants the symbol the status of fundamental being, the is in the sense that counts most. At the same time the symbol stands as the law of what is, the profoundest ought. The symbol, by virtue of its expressing the indicative mode of what is, embodies as well the imperative of that same is. As Paul Tillich and others have remarked, there is no imperative that can match in force the imperative which is but the obverse side of one's essential nature.<sup>27</sup>

The Hebrew-Jewish symbol of the covenant presents a good example of the essential nature of the religious symbol and its unifying of is and ought. The primal event of meaning is that certain tribes of



people perceived themselves standing in a special relationship to God—he is their God, they are his people. Objectification takes place when this meaning is extrapolated as the generic characteristic of God and of human beings. It is God's nature to show *chesed* (mercy) to his people and to establish a covenant order with them, in which they share his love in the context of peoplehood and the possession of the land. In a correlative manner it is said that the essential nature of humans is to be in the relationship of peace (*shalom*) within a covenant with God, fellow creatures, and the land.

Having set this forth as the foundational is or indicative, the symbol of the covenant points immediately and without any break in intelligibility to the imperative. To be human is to live in accord with the covenant of God, which is summarized in the life of *shalom*, oneness with the nation and with the land. To exist outside the covenant relationship of *shalom* is to be a "no-person." A person without a vital relation to the nation and the land and to God no longer exists.

The religious symbol thus qualifies, at least in the minds of its adherents, as one of those empirical bits of experience in which the oughtness is incarnated in the isness. The symbol satisfies Leavenworth's criterion, for example, in that it does "eliminate the artificial, sharp bifurcation made by antinaturalist philosophers between factual or descriptive discourse (statements about what *is* the case) and evaluative or prescriptive discourse (statements about what *ought* to be)."<sup>28</sup>

Paul Ricouer has spoken of the symbol's functioning in his phrase, "the symbol gives rise to thought," suggesting the symbol's power to engender reflection upon what is.<sup>29</sup> Smurl has extended this in his statement—"the experience gives rise to the symbol; and thought gives rise to plans and procedures"—calling attention to the symbol's impetus for ethics, reflection on what ought to be.<sup>30</sup>

#### THE MAIN POINT OF INTERACTION BETWEEN IS AND OUGHT

The question of the relation between is and ought takes on particular importance today precisely because sociobiology has brought scientific theory and research to the point where it can provide relatively precise accounts of those features of human behavior and of the world (in which that behavior transpires) which philosophy has said are necessary if we are to have a solid grasp on the is which contains the ought. That is to say, a solid stream of opinion in contemporary philosophy has said that certain data of experience contain within themselves the oughts that compromise our values and guide our actions. Sociobiology has developed to the point where it can provide

us, or at least it promises to provide us, with scientific empirically verifiable accounts of the data of experience which philosophers have ruled necessary for knowledge of our basic values. Science, in other words, steps on the stage today and presents itself as the most massive and trustworthy and generally accessible source of knowledge for discovering and understanding the values that humans live by, and it does so not by declaring philosophy wrong or misguided but rather by providing exactly what philosophers have called for. Let us probe this contention in some detail.

*Is, Ought, and Needs.* We have noted the philosophical opinion, widely held, that the experiential data that contain oughts within them are the experiences of needs. Hare writes: "We have the pro-attitudes that we have, and therefore call the things good which we do call good, because of their relevance to certain ends which are sometimes called 'fundamental human needs.'"<sup>31</sup> Anscombe called at one point for a moratorium on moral philosophy until such time as a philosophical psychology was developed, which could provide among other things an account "at least of what a human action is at all, and how its description as 'doing such-and-such' is affected by its motive and by the intention or intentions in it."<sup>32</sup> Foot epitomizes this insight in her argument that the practical implication of the use of moral terms is that virtues or oughts actually turn out to be needs.<sup>33</sup> Midgley elaborates the point at some length, suggesting "that, when we wonder whether something is good, common sense will naturally direct our attention to *wants*."<sup>34</sup> Our wants conflict, and so we need to have the full facts about our wants clearly before us if we are to order them into a system of reasonable priorities: "If we say that something is good or bad for human beings, we must take our species's actual needs and wants as facts, as something given. . . . It is hard to see what would be meant by calling good something that is not in any way wanted or needed by any living creature. . . . we have no option but to reason from the facts about human wants and needs."<sup>35</sup>

We shall have to overlook, for the purposes of this discussion, the fluid, even careless use of the terms "needs" and "wants," as if they were synonyms. The important thing to notice is that sociobiology now provides or promises to provide an objectively verifiable description of the wants and needs of living species and human beings. This objectively verifiable description can supplement and deepen the more intuitive and impressionistic descriptions of the needs and wants of human beings provided by the various social sciences. The descriptions of the sociobiologists range from the microgenetic level to the

gross behavior level that is scrutinized by ethologists, anthropologists, and experimental psychologists. These descriptions throw light not only on external behavior but also on feelings, desires, and the like.

One example of such a description is the discussion in the sociobiological literature of altruism. R. L. Trivers, Richard Dawkins, and Wilson (who rely also on the work of many others) have devoted attention to the genetic considerations that pertain to altruistic behavior in living creatures, and their discussions throw light on the genetic manifestation of a need that can be called altruism.<sup>36</sup> These same scientists, together with V. C. Wynne-Edwards, George Edgin Pugh, and a host of others have observed the gross behavior of organisms and animals, up to and including the higher primates and humans.<sup>37</sup> Others have dealt with altruism on a still larger scale, including its psychological components (Donald T. Campbell and others), its cultural significance, and the relationship of altruistic cultural manifestations to the genetic substructure (Ralph Wendell Burhoe).<sup>38</sup> These studies include both detailed scientific research data, sometimes not subjected to highly developed interpretations, and breathtaking theoretical conceptualities. Sometimes these levels are combined as when Solomon H. Katz, an anthropologist, recently described altruism in the context of the cultural phenomenon of grandmothers' relationship to grandchildren in terms of cultural, psychological, and genetic dimensions.<sup>39</sup> I might also mention Gary Becker's use of sociobiological materials to develop the correlations with a theoretical model of altruism within an economic system.<sup>40</sup>

The literature on altruism is already immense, even though it is by no means yet sufficient to explain altruism fully—and this is only one of the wants and needs that are pertinent to the philosophers' arguments. Nevertheless this scientific study of altruism, together with the theoretical conceptualities, enables us to begin to understand concretely and to follow out the implications of what the philosophers have pointed us toward—the character of the “is” experiences of needs and the nature of the oughts contained in them. These scientific studies enable us to assess empirically whether the philosophers I have relied upon are correct in their rejection of the categories of naturalistic fallacy, is/ought dichotomy, and in their questioning that reasoning cannot arrive at an evaluative conclusion if it has only descriptive premises from which to begin. Here in the scientific studies of altruism we have the basis for the philosophical psychology that Anscombe asks for, the careful comparison of needs that Midgley requires, the objective base of a “fundamental human need” that will illumine Hare's comment that pro attitudes are what they are because

they are relevant to such needs. Here we have the sort of scientific description that makes sense of Foot's provocative suggestion that analysis of justice is incomplete until it shows that and how and why justice is needed by human beings.<sup>41</sup>

One more example may illumine how the scientific study challenges and amplifies the philosophy. Consider this passage from Hare's essay, "Wrongness and Harm": "It is not universally the case that if we want something, it is in our interest to have it, nor that if something is in our interest, we want it. I do not think that anyone would maintain so crude a connexion as this between the notions."<sup>42</sup> The sociobiological materials (let us say, on altruism) compel us to ask what Hare means by the term "want." Is it a felt need or lack? This is certainly one dimension. Or is it an unmet need that manifests itself in our feelings and behavior? For example, the genetic processes that underlie altruism are not felt as such, and yet they manifest themselves in both feelings and behavior. Or is a want the end products of reflection upon what has manifested itself in feelings and behavior, with the judgment that reflection can add, pro or con? Furthermore, on what basis do we say that a want is not in our interest? If wants, such as altruism, have their basis in the genes or, as others argue, in culture, and both genes and culture are subjected over the millennia to selection processes, in what sense are these wants not in our interest? How could they not be in our interest? Has the selection process gone wrong? Or do we mean that although the underlying genetic (or cultural) processes are correct, even good, in their own right, we have falsified them by allowing them to eventuate in wrong feelings or behaviors? What is the source of this wrong, falsifying expression of undeniably valuable genetic (or cultural) processes? Or do we mean that valuable genetic (or cultural) dynamics have been embodied in behaviors that were once adaptive but which now, due to changing environmental conditions, are maladaptive? In the case of wrong or maladaptive behavior, what is it that is not in our interest? The genetic (or cultural) dynamic? Or the secondary expression of that dynamic in feeling and behavior? What Hare stated as a simple cliché has become much more complex and possibly false when viewed in the light of contemporary science.

*Dyck's Gap-Induced Requiredness.* I have mentioned briefly Dyck's argument that the ought is given to experience in the experiences (the is) of gap-induced moral requiredness. The scientific enterprise as I have discussed it is illumined by Dyck's schema, even as that enterprise provides, within Dyck's terms, the is which he speaks of. The sociobiologists do engage in a gap-closing argument that goes some-

thing like this: If certain basic need  $x$  is not attended to, the human (or natural) system is threatened, that is, it will not continue or at least will not continue well or as it is designed to function. There is an inferred gap here: We ought to do  $x$  or  $y$  or  $z$  in order that this gap not continue to exist.  $X$  or  $y$  or  $z$  becomes values, oughts, obligations. For example, Pugh demonstrates that such items as the opportunity to dominate, the opportunity to contribute to the common enterprise, face-to-face relations of talking and listening, humor, fairness are fundamental human needs. His argument is an indirect form of: If these basic needs are not attended to, human beings will not continue to exist or at least will not continue to exist well or as they are designed to exist.

Here we have a very clear case of moving from is to ought, from fact to value, from science to ethics. The fundamental issue is survival or the enrichment of surviving human life. If Pugh is correct that dominance, face-to-face relations, et al., are basic needs, then without them human life will cease or becomes less than it could and should be. This gap induces us to respond by closing it, that is, by insuring that there will be opportunities to dominate (whether by becoming a superb pianist, a champion tennis player, or a bruising, cruel, wife-battering husband), for intimate relations and the like. The experience of the gap includes the experience of the is which constitutes the requirements of the human living system and also the imperative sense that something must be done to close the gap by fulfilling the system's requirements. Scientific fact has provided the ought.

*Searle's Institutionalization of Fact.* Searle's point is that facts are not simply "brute" (to refer to Anscombe's discussion of "brute facts") but also on occasion encased in the very experience of them within institutions or contexts of meaning that bring on oughtness with them.<sup>43</sup> Searle, as I indicated, uses the institution of promising as his chief example.

The sociobiological interpretations of life suggest that our very existence takes place within the institution of evolution, governed by the dynamics of natural selection. This context could be said to be a Searleian institution. One does not have to make a decision to "evolve" in order to live. One does not decide to set the genetic dynamics in motion in order to live. It is not legitimate to hold a person accountable for his or her genes' following the laws of natural selection on the grounds that the person accepted that accountability in the act of existing. Rather the very occurrence of genes entails development according to the dynamics of evolution and natural selection. Therefore survival is a value, in some sense, that is embodied in the

evolutionary institution in which we all live. All of Pugh's values could be said likewise to be institutional facts.

*Hare's Concept of Wrong.* In his essay "Wrongness and Harm" Hare is building bridges between himself and his critics.<sup>44</sup> His interesting argument goes like this: Harm is the act of preventing some interest being satisfied in that such an act would prevent from being fulfilled (some prescription) to which another person had assented. Such prevention of a prescription's fulfillment is a wrong and harmful act. Hare extends, in a provocative manner, the concept of prescription to animals and inanimate things by asserting that when objects are used by a conscious being the prescriptions of that being may be attributed to the object. Further, if an animal engages in goal-directed behavior, that may be said to imply a prescription. Thus our actions toward animals, objects, as well as toward other persons may be termed harmful and wrong if they prevent prescriptions from being fulfilled.

Scientific investigation and theorizing describe Hare's prescriptions in the same manner that they illumine needs. In that moment scientific fact becomes ought laden, in accord with an argument that goes like this: The ecosystem (world, human species) has needs (goal-directed behavior); to fulfill these needs is a prescription; to prevent such fulfillment is harmful and wrong; therefore we ought to fulfill these needs.

The conclusion to be drawn from this discussion is that since science can and does furnish massive description and interpretative theorizing with respect to the is which philosophy insists contains the basic oughts from human life, that science is a massive and perhaps the most persuasive source of values available to us in our time.

#### THEOLOGICAL POSTSCRIPT

I am now ready to deal directly with my central concern—the relationship between science and Christian theology. There are several reasons why I was constrained to wander through so much underbrush and attempt to clear it away. Perhaps the most important reason is that theology and theologians who attempt to deal constructively with science are continually being challenged as to why they take it seriously in a constructive manner, that is, as to why permit it to influence their theological formulation.<sup>45</sup> Further, such theologians (among whom I count myself) are often charged with moving naïvely from scientific description and theory to theological affirmation, from is to ought.<sup>46</sup> It is no overstatement to say that the

majority of theologians and religious philosophers who take account of science devote themselves to probing the is/ought problem under the assumption that Moore and Hume (as interpreted from a Mooreian perspective, which Hunter calls the BGI, the Brief Guide Interpretation) are unassailably correct, that the naturalistic fallacy is to be avoided like the plague, that one cannot derive evaluative conclusions from descriptive premises.<sup>47</sup> Far too many fine minds in theology and religious philosophy have devoted too much ink and paper to reiterating that is and ought shall never meet, that the cliché about descriptive premises and evaluative conclusions is indeed unquestionably true. The result is that, despite their ingenuity and admirable subtlety of mind, these theologians and philosophers never get around to making substantive statements about science and theology, never permit scientific fact to inform theological formulation. They are victims of philosophical paralysis.

What I hope for the first three-fourths of this paper is that it has cast at least a shadow of doubt on the BGI of the possibilities for the conversation between science and Christian theology. I hope that it has raised the possibility that one can seriously propose that scientific fact not only is relevant to values but also is a resource for discovering values and oughts—that one can propose such a thesis and nevertheless truly be neither naïve nor uninformed. This thesis stands as a candidate for reasonableness because science has met the criteria which have been set by the intellectual gatekeeper of the road over which science and theology must traverse in their attempts at rendezvous, the gatekeeper which is called philosophy.

If my argument is cogent, that scientific description and theory stand under philosophical scrutiny as the foremost source of value and oughts for us today, the consequences for theology are significant indeed. Earlier I set forth the view that religion begins its discussion in the intellectual marketplace with symbols which claim to unify is and ought in the most intimate bond. Now, if the scientific enterprise be the foremost source of description of what is and also of what ought to be, theology is forced to assume one of three possible stances in the marketplace. It may insist that the descriptions of what is and what ought to be that come embodied in religious symbol are the only true descriptions and thus remain fully indifferent or hostile to science. Or theology may leave the scene of the marketplace altogether, allowing as scientific description is the most important and adequate presentation of what is and ought to be, thereby rendering religion secondary or else quite obsolete. Or finally theology may insist that science and religion are both essential to the whole truth of what is and what ought to be.

The first position runs the risk of obscurantism. For theology to insist that religious symbols present their claim to set forth what is and what ought to be with no relationship to science is an option that seems unreal in intellectual circles. It is a stance that is seldom licensed by the best authorities. Nevertheless it is a widespread stance, and it flourishes in many quarters. So much does it flourish that it is often caricatured by the cultured despisers of religion and used as a straw man for polemics against religion.

The second position runs the risk of theology's being the object of a reductionism by the forces of scientific materialism. Such reductionism does take place because science can claim so persuasively to be the sufficient source of knowledge about what is and what ought to be. Wilson's latest book, *On Human Nature*, which won the Pulitzer Prize in 1979 in the United States, is remarkable for its daring and straightforwardness in admitting that science is the source of mythology as well as of description.<sup>48</sup> He calls this mythology the "evolutionary epic," and he challenges scientist and religionist and John Q. Citizen alike to recognize how questions of human destiny and human responsibility are dealt with in the scientific world view—become-mythology. As this mythology of scientific materialism reaches into the human limbic system, it will replace the other two grand mythologies—traditional religion and Marxism. Alexander J. Morin, himself no mean figure in the American scientific community, has advanced the thesis that sociobiology's claim to be a mythology has contributed to the bitter criticism of the fledgling science. He states the issue thus:

Sociobiology is based on the tenets of scientific materialism. These tenets are taken largely for granted in *Sociobiology* and made explicit in *On Human Nature*. They consist essentially of a belief in the existence of an objective reality, in which all events are determined by consistent forces that are themselves part of the reality and that are . . . capable of description by the application of the methods of scientific inquiry. The world view that results from this belief system has no room in it for the immaterial, for ultimate purpose, or for any class of events that is exempt from its universality. There is little comfort for humanity in this doctrine.<sup>49</sup>

Morin's point is that, although most scientists may believe something like what Wilson and his colleagues set forth, the scientific community becomes uncomfortable when "faced with any statement of faith, even one that purports to be based on scientific principles."<sup>50</sup> In any case, although it is as unpalatable to many scientists as the first stance is to theologians, scientific materialism is alive and well in this world, and it bids fair to clear religion, including the Christian religion, away from the marketplace of ideas.



The third position is the only one that is fully permissible for theology. Each of the first two stances is rooted in the claims of religious symbol and scientific description, respectively, to represent most adequately the unity of is and ought. The third stance is rooted in the same matrix, with the difference that theology finds in that rootage the courage to maintain its own claims in the marketplace as well as the honesty to admit that, precisely because religious symbol brings is and ought to light in their interrelatedness, it must respect authentic manifestations of what is and what ought to be wherever they arise.

The third stance, that of the necessary coexistence of science and religion as representations of is and ought, holds its own risks. Scientific description and theory are persuasive today, and that persuasiveness is grounded in the success with which science works to make our world understandable and also in the success with which science enables us to do things that we want to do. The chief risk for theology in coexisting with science in the marketplace is that the power of the scientific description irresistibly moves the discussion of is and ought into the arena of survival and nonsurvival. Dyck's analysis brings this risk to the fore. The most urgent gap experienced by humans—and therefore the most pressing gap-induced requiredness—is the gap created by the possibility of not surviving.

Theology therefore has no alternative today but to speak its truth about what is and what ought to be in terms of survival—the survival of the species, of the world, of values, of human worth, of all that is cherished by the human spirit. In our time theology is not accustomed, by and large, to speak in survival concepts with a survival vocabulary. Theology must learn so to speak. But as it learns, it runs yet another risk—the risk that it will fail to recognize that the concepts and vocabulary of survival must be transvalued, given new meanings, when they enter the theological precincts. If new meanings are not added, reductionism to materialism will have taken place automatically. This would threaten the credibility and survival of theology. More important, it would, I believe, betray the hopes of humankind itself, which looks to theology to speak survival language with new and more satisfying meanings. Theology discovers that the risks it runs, as well as its capabilities to deal with the risks, take their shape from the same source—from the adequacy of both science and religion to present the is and ought in the marketplace of ideas where men and women come looking for a word of truth.

#### NOTES

1. Victor Ferkiss, *The Future of Technological Civilization* (New York: George Braziller, 1974), p. 90.

2. Spinoza *Ethics* 4. 38, as quoted by William Frankena, "'Ought' and 'Is' Once More," in *Perspectives and Morality: Essays by William K. Frankena*, ed. K. E. Goodpaster (Notre Dame, Ind.: University of Notre Dame Press, 1976), p. 137.
3. Essays by these writers appear in W. D. Hudson, ed., *The Is-Ought Problem* (London: Macmillan Co., 1969). See also O. Foto, "Moral Arguments," in *Moral Philosophy*, ed. J. Feinberg and J. West (Encino, Calif.: Dickinson Publishing Co., 1977), pp. 430-36, and Mary Midgley, *Beast and Man* (Ithaca, N.Y.: Cornell University Press, 1978).
4. R. M. Hare, "Descriptivism," in *Essays on the Moral Concepts*, ed. W. D. Hudson (Berkeley: University of California Press, 1972); idem, *The Language of Morals* (Oxford: Clarendon Press, 1952); Frankena, p. 141.
5. Hare, "Descriptivism," p. 257.
6. Edward O. Wilson, *Sociobiology: The New Synthesis* (Cambridge, Mass.: Harvard University Press, 1975).
7. *Ibid.*, p. 4.
8. See Arthur L. Caplan, ed. *The Sociobiology Debate* (New York: Harper & Row, 1978); M. Ruse, *Sociobiology: Sense or Nonsense* (Dordrecht: D. Reidel, 1979).
9. Wilson, p. 562.
10. *Ibid.*, p. 563.
11. Edward O. Wilson, *On Human Nature* (Cambridge, Mass.: Harvard University Press, 1978), pp. 5-6.
12. See n. 3 above.
13. See n. 4; also Alan Gewirth, *Reason and Morality* (Chicago: University of Chicago Press, 1978).
14. John R. Searle, in Hudson (n. 3 above), p. 120.
15. Hare, "Descriptivism," p. 257 (*italics added*).
16. Hare, in Hudson (n. 4 above), pp. 105-9.
17. Frankena (n. 2 above), p. 141.
18. Gewirth, p. 158.
19. *Ibid.*
20. Searle, in Hudson (n. 3 above), pp. 129-35.
21. Arthur J. Dyck, "Moral Requiredness: Bridging the Gap Between 'Ought' and 'Is'—Part I," *Journal of Religious Ethics* 6 (Fall 1978): 293-318; see also his "A Gestalt Analysis of the Moral Data and Certain of Its Implications for Ethical Theory" (Ph.D. diss., Harvard University, 1965).
22. Dyck, "Gestalt Analysis," pp. 70-73.
23. *Ibid.*, pp. 50-70.
24. Stephen C. Pepper, "Survival Value," *Zygon* 4 (March 1969): 4-11; idem, "On a Descriptive Theory of Value: A Response to Professor Margolis," *ibid.*, pp. 261-65; Mary Leavenworth, "On Integrating Fact and Value," *ibid.*, pp. 33-43; idem, "On the Impotence of Unnatural Values," *ibid.*, pp. 281-85; Abraham Edel, *Ethical Judgment* (New York: Free Press, 1955); idem, "The Relation of Fact and Value: A Reassessment," in *Experience, Existence, and the Good*, ed. I. C. Lieb (Carbondale: Southern Illinois University Press, 1961), pp. 215-29.
25. Edel, in Lieb, p. 221.
26. See, e.g., the discussion by Peter Berger, *The Sacred Canopy* (Garden City, N.Y.: Doubleday & Co., 1967), chap. 1.
27. Paul Tillich, *Morality and Beyond* (New York: Harper & Row, 1963), chap. 1, esp. pp. 19-20.
28. Leavenworth, "Impotence," p. 281.
29. Paul Ricoeur, *The Symbolism of Evil* (New York: Harper & Row, 1967), pp. 347-57.
30. J. F. Smurl, *Religious Ethics: A Systems Approach* (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1972), pp. 2-10. I am indebted to my colleague Franklin Sherman for this reference.
31. Hare, "Descriptivism" (n. 4 above), p. 256.
32. G. E. M. Anscombe, in Hudson (n. 3 above), p. 179.

33. Philippa Foot, in *ibid.*, pp. 206-8.
34. Midgley (n. 3 above), p. 182.
35. *Ibid.*, pp. 182, 189.
36. R. L. Trivers, "The Evolution of Reciprocal Altruism," *Quarterly Review of Biology* 46 (1971): 35-57; Richard Dawkins, *The Selfish Gene* (Oxford: Oxford University Press, 1976).
37. George Edgin Pugh, *The Biological Origin of Human Values* (New York: Basic Books, 1977).
38. Donald T. Campbell, "On the Conflicts between Biological and Social Evolution and between Psychology and Moral Tradition," *American Psychologist* 30 (1975): 1103-26 (reprinted in *Zygon* 11 [September 1976]: 167-208); Ralph Wendell Burhoe, "The Source of Civilization in the Natural Selection of Coadapted Information in Genes and Culture," *Zygon* 11 (September 1976): 263-303. It should be noted that the scientists differ on the question whether altruism is transmitted exclusively by genetic evolution or by psychosocial (cultural) evolution. It is not germane to the purposes of this essay to comment on this debate, although the discussion here does presuppose that Campbell, Burhoe, and others are correct in their insistence that genetic evolution is inadequate to convey altruistic behavior beyond close kinship groups.
39. Solomon H. Katz, "The Anthropological Basis of Values" (manuscript, 1979).
40. Gary Becker, "Altruism, Egoism, and Genetic Fitness: Economics and Sociobiology," *Journal of Economic Literature* 14 (September 1976): 817-26.
41. Foot (n. 33 above), pp. 211-13.
42. Hare, in Hudson (n. 4 above), p. 97.
43. Anscombe (n. 32 above), p. 178, and "Brute Facts," *Analysis* 19 (1958).
44. Hare (n. 42 above).
45. E.g., P. L. Holmer, "Evolution and Being Faithful," in *Changing Man: The Threat and the Promise*, ed. K. Haselden and Philip Hefner (Garden City, N.Y.: Doubleday & Co., 1968), pp. 156-68.
46. See James Gustafson, "Theology Confronts Technology and the Life Sciences," *Commonweal* (June 16, 1978); Langdon Gilkey, *Religion and the Scientific Future* (New York: Harper & Row, 1970), esp. chap. 1.
47. Gilkey; Ian Barbour, *Myths, Models and Paradigms* (London: S.C.M. Press, 1974); see also nn. 45-46 above.
48. Wilson (n. 11 above).
49. Alexander J. Morin, "Revelation and Heresy in Sociobiology," *Science, Technology, Human Values* 27 (Spring 1979): 24-35.
50. *Ibid.*, p. 27.