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Human Values in Relation to Evolution

If genetic natural selection applies to likes and dislikes, what is the true status of values?

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By something of value we mean, of course, something desirable, to be striven for, and from the attainment of which we presumably derive satisfaction. The value of a thing, in other words, is its property of being desirable. If it is undesirable, its value may be said to be negative. By these definitions, all animals that can pursue conscious purposes recognize values in given situations, values partly built in as such and partly channelized and modified by experiences, and these values are of different degrees, so that they could be represented on a scale. Probably only man, however, of animals on this earth, has reached the stage of pondering over values, and singling them out, as it were, by speech symbols. And so only he has attempted classifications for grouping things of related value together and has arranged these groups in hierarchies, with higher rank accorded to those expressing certain general psychological principles, such as heroism or truth. Nevertheless, even the nonhuman animal, like the young child, often acts according to much the same principles, but without abstracting them.

When the matter is regarded in this way, it becomes evident that values are as legitimate a subject of scientific investigation as any other phenomena pertaining to living things. In fact, it is imperative that they be investigated by scientific methods if we would seek greater clarity and assurance regarding our own aims and if we would order and shape these aims in such wise as to attain, in human living, a more harmonious interplay of strivings and of activities, and a deeper sense of fulfillment. The pursuit of this project, however, has unfortunately been hampered by the prevalence of two tenets that are incompatible with it. The earlier, historically, of these tenets holds that values for man are properly determined only by some higher authority, external to him. The second tenet, often thought of as an alternative to the first and yet related and reconcilable with it, holds that, for each individual, questions of value are purely his own private matter, shared only with those who already agree with him, as in the case of some schools of artists, and that these questions cannot profitably be argued about. My discussion is not directed to those who are irrevocably committed to either of these views.

Biological Significance of Values

There are no grounds in evolution theory for regarding the likes and dislikes of nonhuman animals, their emotional reactions and drives, or their resultant desires and values, as being determined by processes any different in essentials from the evolutionary mechanisms whereby their other characteristics were laid down. The same principles of blind mutation, genetic recombination, and natural selection as have been inferred to underlie the evolution of other physiological as well as morphological peculiarities are equally applicable to the genesis and establishment of the so-called affective traits. It is therefore not surprising that the present-day emotional and affective equipment of any species provides the basis for an intricately interrelated web of responses that are all nicely adjusted to the service of the same major end—species survival and expansion—even as is true of all other bodily functions.

This by no means implies, however, that each species is constructed in the best possible way for leading its own kind of life in its own kind of niche nor even that there is any one best way for doing so. For of course the products of evolution, although displaying within themselves amazing coordination, are patchworks thrown together bit by bit without long-range foresight. Time and again they have had to be remodeled opportunistically, in one small way after another, as new emergencies or opportunities have arisen. Undoubtedly, if the organisms could have been made from blueprints designed from the first to enable them to lead their present types of lives under their present circumstances, diverse disharmonies, indirections, and complexities that are now incorporated solidly in their structures could have been avoided, with considerable gain in effectiveness.

In the case of a species which, like man, has changed its mode of life rather recently, in terms of geological time, the remodelings are still relatively crude, conspicuous, and on occasion troublesome. Thus more friction, both inner and outer, would be generated in such species than in the far more numerous ones that had kept running in pretty much their old established ways. All this may

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be expected to hold in the realm of "behavior," including that of desires and values, just as it does in the other modes of functioning of the organism. However, in higher forms and more especially in man, the plasticity of their behavior would tend to conceal defects in its bases.

A consideration of the values that, in any species, are attached to diverse experiences, in situations involving relatively little modification by conditioning or association, necessarily involves some understanding of the entire complex system of drives, response potentialities, thought processes, and sensations, along with the affective mechanisms, including emotions, attached to these activities, in a creature of the given type. Science is at present woefully far from a detailed analysis of these matters. It has been generally conceded that in insects there are indeed a multitude of highly particularized and often intricate patterns of behavior that are to a very large extent genetically determined. Moreover, fish and especially birds are hardly behind insects in this respect, even though their reactions are more open to modification by experience. In the case of mammals, it has been widely held that the genetic behavior patterns are less specific, both in regard to their instigating stimuli and to their methods of response, and that in man they have virtually disappeared, to make way for reactions determined almost completely by experience.

Closer scrutiny shows, however, that despite the enormous increase in the effectiveness and complexity of associations in man, his nature provides him with a great number of unlearned predilections and aversions. These range from those on a purely sensory level. such as a liking for sweets, diverse savories and fragrances, feelings of softness and smoothness, warmth, harmonies, color combinations, varied kinesthetic and other bodily feelings, and so forth, and a dislike for their opposites, to those on a perceptual and perhaps even a conceptual level.

Genetically Based Differences in Values

Of course perceptions and conceptions are gained only by learning. Yet, curiously enough, individuals display marked inheritable differences in regard to the strength of feelings attached to certain concepts, such as the feelings that have been denoted by the terms *egotism* and *sociability*. For example, it requires considerable experience, analysis, and association of sensations and perceptions before one arrives at the concept of one's self and of other selves, yet it seems much as if there were a mechanism lying in wait to attach positive affective values to these concepts when or shortly after they appear. Perhaps this effect represents only the combination of the values already attached to the components of the concept, plus those later added by association. However that may be, self-esteem may become developed much more strongly in one person than in another even though the experiences of the two seem to have been essentially similar, and even though one may seem to have had no more attachment for the separate elements out of which the ego conception was built than the other person has had.

We are far from understanding the built-in mechanisms by which such results come about, but their efficacy is attested in varied ways, both in man and in other more-or-less intelligent animals. Among dogs, for instance, such differences in temperament, as we call them, have long been observed to be associated with particular breeds, even when the young are taken from their parents so early that the behavioral traits in question could not have been acquired purely by experience. At the same time, an acknowledgment of this situation should not lead us to minimize the enormous role of experience, especially in man, in channelizing and shaping the modes of expression of these feelings, and in determining what situations call them forth.

It would be presumptuous and fatuous, in our present ignorance, to attempt here to list or classify the numberless inherent affective tendencies—that is, natural predilections and aversions—observable in mammals, the great majority of which also appear to be present in some degree in man. It should be noted, however, that in those classifications that include only a few general categories, such as fear, anger, love, and curiosity, each item really represents a complex group of natural tendencies that are in some manner related. For instance, under fear would come fear of heights, which recent experiments with nonhuman mammals have shown to be expressed in them in the absence of previous experience, and which undoubtedly evokes somewhat different emotions as well as responses from those found in other innate fears, such as fear of loud deep tones having the quality of thunder or a growl. Again, sexual love is itself very complex in its inherent basis, and although it has elements in common with or similar to those in the parental, filial, and communal forms of attachment, it is misleading to represent it as differentiated from the others, or them from one another, solely as a result of experience. Moreover, in addition to the inherent affective tendencies included under a few general headings such as those mentioned, there are many that do not fit under any of them, such as those that participate in our multiform experiences of beauty and revulsion, of exhilaration and depression, and so on.

Finally, it should be realized that, contrary to the assumption of some authors, the fact that a given psychological trait appears later than at birth by no means affords evidence that it is purely an acquirement gained by experience. Inherent affective traits, like all other characteristics of organisms, tend not to attain manifestation before a given stage, peculiar to that trait. However, because of the enormous influence that is also exerted by experience in the manifestation of traits, the disentanglement of the processes at work in the case of a given trait often becomes very difficult.

Despite a large amount of agreement between different species of mammals in regard to their constellation of affective tendencies, and the way in which these attain expression, there are of course considerable differences between species and even subspecies in the relative strengths of these tendencies, in their mode of expression, and, more especially, in the stimuli that evoke them, in adaptation to the differences in the organisms' modes of life and capabilities. To this extent, each type of creature pursues somewhat different values from the other creatures and different immediate aims. It pursues some of these for their own sake, with due compromise amongst them. These subjective ends are so adjusted that, for each species and subspecies of animal, although of course not for each deviant individual, this compromise tends to work in the direction of the ultimate objective end of the species: its maintenance and spread. But the creature does not recognize this end as such, nor does it recognize even the more limited end of "self preservation" that is popularly attributed to it.

Genetic Foundation of Altruistic Values

Of course, the subjective ends of a creature may be far from purely selfish. First Darwin, and later Kropotkin, pointed out that natural selection is not

just a tooth-and-claw struggle. Insofar as cooperative behavior furthers survival, natural selection has promoted emotional bonds and a spirit of service among members of the same family and the same community. However, this form of selection is limited to situations in which an individual, in helping others, by these very acts somehow assists in the survival of its own genes, or of the same or similarly acting genes in the other individuals —that is, genes of the type that led to these cooperative acts. Obviously the nurturing and protection of the young belongs in this category, since the individual is thereby fostering genes derived from itself. However, many ways of life put a premium on early dispersal of the young and in these cases maternal care is kept minimal. Similarly, "rugged individualism" rather than altruism among adults would tend to win out in the numerous species in which dispersal of adults is advantageous, or in which means of mutual aid, in the sense defined above, are hard to come by.

Fortunately for the mammals, their mammary glands, apparently originally derived from the more generalized sebaceous glands that serviced their fur, provided a ready means of nourishing the young, and thus laid the physical basis upon which a high development of all the maternal impulses, including especially maternal love, became practicable. It is evident that in many cases some extension, with suitable modifications, of these feelings and modes of response to the relations between father and young, father and mother, and finally among all immediate relatives, must have proved helpful to the propagation of the genes concerned in these developments. Under certain circumstances, including those of ground-dwelling primates, which are relatively defenseless individually, there proved to be comparative safety from predators in numbers, and also other advantages, as in hunting, when it emerged, in sharing fire, and in sharing services and abilities. From then on, genetic variations leading to associations among families, and to a partial extension of the affective family ties to the other members of the community, were rewarded by enhanced survival and multiplication. All this meant a step-by-small-step development of the genetic bases of social feelings and behavior—that is, of the complex sometimes comprised under the term *brotherly love.*

It is important to note, however, a self-limiting feature of the genetic process underlying this development. So long as the communities are small, variants having genes that predispose them to helping the members of other families will be able appreciably to foster the survival and spread of their community as a whole. This community, being small and interrelated, will usually contain a higher proportion of genes of the type in question, that lead to this cooperative action, than another community in which there is less cooperation and which therefore is less successful. Thus the cooperative individual tends to further the survival and spread of genes like his own even though he himself is sacrificed. However, as this very process and the cultural evolution attending it cause these groups to grow larger, the power of this strictly *inter*-group selection diminishes. Perhaps the resultant slowing down of natural selection for social traits affords a partial interpretation of the relatively low development of the broader social impulses in present-day man.

As has often been pointed out, social insects which have only a few reproducing individuals per colony do not suffer from this self-limitation of natural selection for social traits when the number of sterile workers per colony increases. These workers represent only somatic extensions of a very restricted colonial collection of genes. Thus the gene composition has the high inter-colony variability of small numbers, and a high degree of self-sacrificing behavior on behalf of the colony reflects and tends to perpetuate and spread the kind of genotype that has produced this behavior. In this way these insects have been able to attain a far higher degree of *genetically based* socialization than has man. Nevertheless, their potentialities are of course far more limited, by their inordinately lower intelligence and capacity to learn, their inability to accumulate culture, and their inability to attain a realization of what the fuss is all about.

It has sometimes been held, as for instance by some schools of Communists, that the development of social feelings in man is merely an expression of enlightened self-interest associated with his intellectual, technical, and cultural development, without any important basis in his inherent affective or emotional peculiarities. A genetically asocial but intelligent man, if already living in a group where social feelings and practices prevailed, would doubtless try to camouflage himself, for his own good, into a seeming replica of his fellows. But this would not prevent the lone wolf in sheep's clothing from practicing self-aggrandizement at the expense of others wherever he judged he could get away with it. A community of such individuals could not hang together indefinitely. Still less would they *voluntarily* organize themselves into a socially behaving group, devoid of genetic sheep. The advantage of mutual aid to a group thus depends in the main upon its individuals practicing it even where they themselves do not reap any profit other than the intrinsic reward of such acts to those for whom such behavior is a primary end. Once such a feeling is present, however, its expression can be reinforced by various accessory motivations, such as pride in following out the rules of the community.

Cultural Elaboration of Values

We cannot enter here into the manner in which, in increasingly intelligent animals, the pattern of behavior, and of affective tendencies, is more and more modified by experience. Still less can we here review the truly revolutionary innovation in method whereby, in man, experience becomes transferred, symbolized in speech and otherwise, accumulated, codified, and sanctified. It is important, however, to realize that it is a function of these processes of modification, whether by individual or by group experience, to extend the inherent affective tendencies to situations which the experiences have shown to be somewhat connected with the ones that originally aroused the given feelings. Thus, for each individual or, where experience is transferred, for each group, a pattern of feelings and responses becomes built up that has, so to speak, been recut so as better to meet the set of circumstances peculiar to that individual or group. Yet the old feelings are in large measure still there, and in many cases they are still evoked by the original stimuli, as well as by the associated ones.

It is true that the associations form extended chains, or rather webs, yet the motivations that trigger the decisions to act or not to act are in the last instance based in the ingrained affective components that are directly or indirectly attached to elements in any given web, and that have now become more or less suffused throughout that web. It should also be noted that, within any web, not all affective components need work in the same direction. Thus the attainment of the final decision may entail considerable inner friction.

The transfer and accumulation of experience—that is, cultural evolution—

was of course possible only because of the intelligence, social disposition, and manipulatory, vocal, and other special proclivities of genetic origin that had laid a basis for it. For a very long time, while culture was being accumulated, this genetic basis also must have been strengthened by natural selection, and the cultural process must have been facilitated thereby. More recently there has probably been a slowing down of the genetic advance, caused by the formation of fewer, larger groups and by the greater efficiency of mutual aid in helping the less fit.

Another factor that must have facilitated cultural evolution in the past is a kind of nongenetic natural selection operating between different groups, and between portions of a group, so as to favor more the continuance and spread of those whose cultures (as distinguished from their genes) were more conducive to their own survival and increase. This process, emphasized in its intergroup aspects by S. J. Holmes, tended to promote the more functional cultures and to curb the biologically unsounder ones that went off on cultural tangents by a kind of inner inertia. Undoubtedly this natural selection of cultural features also went on within the group, to favor the survival and multiplication of those whose traditions of value and conduct were more functional, even as, within our own society, the Shakers, whose religion forbids them all to reproduce, have virtually died out. The situation is of course different with a celibate priestly caste since this is automatically replenished from the rest, although it can of course result in the gradual depletion of superior genetic material in the group as a whole.

Nevertheless, the development of culture proceeds primarily through its own operations. Although the core of these is the joint accumulation of experience, most of that experience until modern times has consisted of purely empirical observations and familiarity with rule-of-thumb operations, with little understanding of the nature of the matters involved. The artificial interpretations, almost always animistic, that were gradually fabricated regarding the nature of the world and man, and the associated rituals, witch-doctoring, and institutionalization of superstition, did however fill the important general function of reinforcing the social solidarity of the group and promoting their cooperative behavior. They also played important technical roles in healing, in advantageously regulating hunting, planting, and so on, and in laying down rules of conduct that were made to seem dependent on the interpretations themselves. Our modern scientific knowledge makes the intellectual fallacies and the technical imperfections of these primitive systems so glaring that we tend to forget the positive role they played until we see a primitive people lose all interest in life and disintegrate when modern civilization deprives them of their Rock of Ages.

The religious and ethical systems of nonscientific peoples expressed the values that they overtly recognized, but in doing so they gave opportunity for the satisfaction of the peoples' actual affective needs and resulted in behavior conducive to the survival and extension of the group. Despite marked differences among these systems, in viewpoint and methods, remarkable similarities are also displayed, especially among the more successful ones, reflecting the underlying likenesses in human psychological and physical needs, combined with plasticity in adjustment to these needs.

All the more successful social systems emphasized by precept and training the importance of service to others, not only in the family (which of course had priority) but also in the group as a whole, and, later, more especially, to the leaders. Moreover, those specific attitudes and practices were fostered that tended to make that service more effective: practices such as veracity, integrity, self-control, industry, and courage. In addition, devices were used for arousing ecstatic emotional experiences that deepened and intensified the individual's sense of forming a part of a greater family, dominated by a greater father, who provided greater rewards and more frightful punishments. These experiences also enhanced the individual's sense of privilege and achievement in participating in the activities of this supernal fellowship.

Revision of Values under Civilization

Until some 2500 years ago community loyalty was usually accompanied by a then healthy suspicion and even hostility toward other communities, especially those with different cultures, and often by a zeal in striving against them that matched and nourished the intragroup cohesion. But with the rise of the great empires that embraced many previously separate peoples, doctrines of brotherhood among all mankind began to gain increasing acceptance. Along with this there was a growing adherence to abstract conceptions that were supposed to embody universally valid higher values, such as Plato's "Goodness, Beauty, and Truth." However, these terms were seldom defined concretely enough, in view of the innumerable interpretations which could be given them, to provide unequivocal solutions to problems of actual living on the part of either the individual or the group. Thus, Plato regarded slavery as fundamental for his system of Goodness, Beauty, and Truth.

It is high time for modern man, everywhere, again to revise his concepts of values, in accord with the utterly new view that science, and especially evolutionary science, has given him of the nature of the world and of his actual and potential relations to it. We must admit that it is much too early for detailed formulations of the place to be accorded to the diverse major and minor values that flow out of his numerous inherent affective tendencies and out of the possibilities of interconnecting them, modifying their modes of instigation and expression, enhancing some and subordinating others. For this purpose we have as yet far too little knowledge of just what these tendencies are, and of their genetic and acquired variations, in neurological, psychological, and sociological terms. Yet we can already discern clearly certain major features that lead to important general conclusions.

Man is not made with any one inherent affective tendency or drive and associated value, that can normally provide a clearly overriding aim for all his existence. It is true that *deprivation* of the opportunity to pursue a given drive may cause its value to become overriding. But be this drive sexual love, love of offspring, of his fellows, or of himself, be it joy in domination, or in subordination, be it love of variation or of the familiar, or of good eating, or anything else, man is normally a great bundle of natural and acquired wishes and values, interrelated in a pattern that is partly individual but very largely a product of his group's cultural evolution, including the contributions made by great and little thinkers of his past. This entire complex has in its general lines been framed so that the working of this system tends on the whole to promote the survival and multiplication both of his family and of his larger group. Thus his values tend to be realized more fully when this objective end, even if not understood, is promoted by him.

It is natural that this should be the case, since in the first place natural selec-

tion has worked to provide him with predilections and aversions that under primitive conditions would combine to lead to this result. In the second place, his culture has on the whole worked to modify the directions of these wishes and struggles so as to lead to this result under the conditions of that culture. In recent times, however, human understanding and the conditions of human living and association have been changing so fast that our systems of values and ethics, education, and social relations have fallen behind and are not well enough adjusted to our present needs and knowledge.

What kind of reorientation is needed? Obviously, one in which our motivations are reshaped in accordance with our modern knowledge of the world and ourselves.

Among the deeply and complexly rooted inclinations of men is their readiness to accept the challenge of any situation confronting them, if it affords a hope, through struggle, of winning through to greater life for themselves and for those with whom they identify themselves. With the shrinkage of the world, and the suicide that is being committed by war, if it does not murder us first, each man must ever more strongly identify himself with humanity in general. The visions that he has obtained of the unimaginable progression already accomplished in past evolution, of the unprecedented powers which he himself has now gained through science, and of the fathomless reaches to which man may go, in terms of greater life, by the rational use of these powers in behalf of himself and posterity, afford an overall directive for his efforts that is in accord with the objective end of the species—namely, its survival and extension—and also with most of his own more immediate subjectively based values. Enough can thereby be gained for the individual, in enhanced richness and harmony of life, to recompense him on a personal basis to a degree unparalleled in the past, especially if we will take advantage of already existing psychology and psychiatry. At the same time, he can attain a sense of participation in a joint endeavor far greater than his own that is more solidly based and more buoying to his spirits than that gained by obedience to a tenuous superior power.

As between individual and social values (or welfare) there is no ultimate contradiction for beings who have the natural feelings that lead to mutual aid. However, until we have gone further in the development of these feelings, through both training and genetics, there will be many situations calling for difficult compromises on our part. It is important in such connections to remember that those men who have had better opportunities for all-round development and zest in life, as a result of their personal experiences and activities, and who have a significant voice in the determination of their own destinies, can also give better service to the community.

Higher Values

It may here be objected that we have not yet given an opinion as to what should be considered the higher subjective values that are most to be striven for. If objectively we take survival and extension of the species to be the end, as set by evolution, then we find that in our own line of descent the two groups of psychological characteristics that have been the most important in putting us into our dominant position were those making for intelligence and those making for cooperative behavior. Moreover, despite the revolutionary changes wrought by our culture since its creation of modern science, it is evident that these two functions, especially when enhanced through cultural measures and, I believe, eventually through genetic measures also, will *continue* to provide the most important means of meeting the evolutionary test of survival and extension, while at the same time they will render us ever more capable of filling not merely our physical but also our psychological needs—that is, of achieving and advancing our values.

In accordance with this thesis, we may place in the foremost positions among psychological needs, and we may accord the highest value to, for one thing, the gratification of curiosity—that is, the pursuit of truth for its own sake, by methods of the most effective kind (the kind used by science)—and, for another thing that is no less important, the fulfillment of love in its varied aspects. Among other values, the cultivation of which is also highly important, we may mention here as a few examples, largely overlapping with one another and with the two already given, the zest for making one's own decisions (that is, for the exercise of freedom), for achievement, creativity, variety, and adventure, and the appreciation of nature, art, and artifice. All of these overlapping values can be harmonized with one another, and the seeking of them will play major functional roles in our objective as well as subjective progression.

It has been rightly said that biological evolution is multidirectional and cruel and that the vast majority of lines of descent end in pitiful anticlimaxes. Yet it is also true that intelligence and cooperation, culminating in ourselves, have not merely constituted one of the lines of nature's development, but *the* one which, through its increasing control of the rest of nature in its own interests, has become by far the most prominent. But this development is only beginning. It is our business to take it as much farther as we can, in the creativity of our coordinated, voluntary efforts. Through the unprecedented human faculty of long-range foresight, jointly serviced and exercised by us, we can, in securing and advancing our position, increasingly avoid the missteps of blind nature, circumvent its cruelties, reform our own natures, and enhance our own values.

The foregoing conclusions represent, I believe, an outgrowth of the thesis of modern humanism, as well as of the study of evolution, that the primary job for man is to promote his own welfare and advancement, both that of his members considered individually and that of the all-inclusive group, in due awareness of the world as it is, and on the basis of a naturalistic, scientific ethics.