

Humanist Beliefs and Science

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IT IS NOT too difficult for a group of Humanists to agree on generalities about their beliefs. Humanists are non theists and non teleological naturalists, basing their ethic on human dignity and decrying relationships that are demeaning, debasing, and which violate concepts of liberty, equality, and community. They are opposed to rigid conformity, inequality, and egocentricity. Humanists hold existence to be potentially good and believe that being is not regrettable. They try to base their beliefs on reason subject to verification. They continue to affirm their confidence in free inquiry and the uses of critical reason.

Humanists place a major reliance upon science and hold it is the best way yet developed to establish a belief pattern. This is not because science has the final and ultimate truth but because the methodology of science emphasizes that ideas should be subject to experimental testing and independent verification. Science also puts a premium on keeping an open mind, on the necessity of change as new understandings develop, and emphasizes that behaviors which benefit society as a whole also benefit individuals.

It is not so much these assumptions or principles or beliefs which

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have given Humanists pause in the past, but the way in which they have been implemented. Some have tried to make science a new religion, as if science were unchanging and eternal, and not simply methodology. This is both a perversion of humanism and of science.

Part of the difficulty is due to the fact that individuals looking at the same set of data often arrive at different conclusions which are dependent upon cultural factors, social class, sex, and any number of other factors. Bluntly, what we often espouse as humanist values and I must speak not of Humanists dispassionately in the third person but as a dedicated Humanist myself are traditional middle class western masculine Caucasian ideology. This same ideology has served as the filter through which scientific concepts have been observed and interpreted. Even though science might in theory be value neutral, in practice it sometimes fall short in this respect simply because it has been interpreted by people with set belief systems. Fortunately, because the methodology of science allows for periodic correction over time some of those engaged in the science enterprise have changed to conform to new realities. Often, especially in cases where prejudice runs deep, there is an initial reluctance to accept some of the new realities which science has demanded. As evidence builds, however, changes occur. Some of these changes have been so radical that they have been called revolutionary. A good example is the change from the geocentric universe to the heliocentric one and ultimately to the recognition that our sun is a rather minor one in a universe of suns (Bullough, 1970). Another radical change has been the emergence of the concept of evolutionary development which some segments of society still do not accept. It is popular today to cite Thomas Kuhn and his paradigm of scientific change (Kuhn, 1962) as explaining such major changes although it is equally possible to look upon science itself as always evolving and to make an analogy between science and biological evolution. Both are examples of a selection process.

There are also conceptual lineages which change as a result of selection within and between lineages, just as evolution occurs by selection within and between populations (Hull, 1988). It is this selection process, which changes from generation to generation, which sometimes results in the challenging and undermining of the scientific assumptions of one generation by a new set of different assumptions of the next. This process of change puts an ethical obligation on Humanists, one missing in the true believer of a static religion. The nature of science and its importance to Humanists forces us to decide just what we want to emphasize as important to our ethical beliefs, even though "science" at anyone time might not fully support such a belief. It also directs us to select the kind of values we ought to emphasize in our scientific exploration for greater truth and knowledge.

These values might change over time but since they are part of our cultural assumptions, Humanists might well face the same kind of difficulties that fundamentalists face when their basic assumptions are undermined. What do Humanists do when their "eternal verities" are under attack?

Challenges to Traditional Beliefs

Changes in scientific assumptions in the twentieth century have mounted an increasing number of challenges to traditional belief patterns. Among them, and in no particular order, are: the development of plate tectonics and the movement of the earth; the quantum theory of Max Planck; Einstein's theory of relativity; the development of non Euclidean geometry; the physico-chemical model for carrying genetic information; Freud's assumptions that individual personalities develop through a series of requirements upon which the community insists, and the most current challenge, at least on some levels, of a theory of chaos. The list could be lengthened considerably but the ultimate result is only to emphasize that we as Humanists have to deal with a different set of assumptions in the 1990's than the free thinkers of a hundred years ago. Some of the assumptions under which they operated, would probably no longer be accepted by today's Humanists.

As we try to develop new ground rules for the 21st century, we have to continually remind ourselves that our values are products of our culture and they have to be examined in light of free inquiry and critical reasoning. This is a particularly difficult task which many, even in the scientific community, have failed to do in the past. One of the more notable examples of using science to make erroneous assumptions was the nineteenth century debate over the biological purpose of women. The debate was heavily influenced by conservative ideologues who were determined to oppose the growing feminist advocacy in the last part of that century. To this end they offered "scientific" proof that women were inferior. This appeared particularly in the writings of Edward H. Clarke, professor of materia medica, at Harvard Medical College. Clarke, it should go without saying, was strongly opposed to the entry of women into the medical college, and rather than admitting his bias, he called upon science to bolster his own prejudiced opposition. He could do so because little was known about female physiology in the nineteenth century, even on such normative processes as menstruation. Obviously men do not menstruate and throughout history, this has been used as an argument for their superiority to women.

Men do not bear children either and at least from the time of the Greeks there had been some recognition that menstruation and pregnancy

somehow went together but how was not clear. The debate had been further complicated by William Harvey in the seventeenth century who had studied fetal development in deer and hypothesized that the female of the species contribute ova in which life develops although even in the nineteenth century this had not yet been observed in any mammal. Harvey's emphasis on the ova, moreover, was soon eclipsed by the discovery that semen contained sperm which allowed the scientists of the day to again hypothesize that the female role in reproduction was a passive one in which the important thing was the male sperm and the role of the female was to carry and help this seed grow, something with which the menses were also related. The Problem was to explain what caused menstruation and the ultimate answer was never given until well into the twentieth century. This lack of knowledge, however, did not prevent others from advancing "scientific explanations" based upon certain widely accepted assumptions. These assumptions could not be scientifically demonstrated or verified at that time, but were regarded as so self evident that many people were willing to call their assumptions scientific.

Several observations were brought together to form a new hypothesis. One observation which has a long historical tradition is the effect of stress on the menses since stress can either delay or bring on an early onset. Inevitably, some scientists would feel comfortable with regarding menstruation itself as a nervous phenomenon but no one developed it to quite the extent that Clarke (1874) did. He claimed to write as a defender of women and stated that though women as individuals had the right to attempt to do many of the things that men do, their physiology simply made it impossible for them to compete with men or do most of the tasks that men do and still retain their good health. He held also that there was a basic difference in the developmental stages of boys and girls. Boys, he claimed, developed in a series of gradations from birth to manhood while girls on the other hand had a sudden and "unique spurt of growth" in which their whole being seemed to be concentrated on the development of their reproductive system. This growth period which resulted in menarche and basic anatomical changes was in Clarke's mind primarily induced by developments in the nervous system. This meant, he claimed, that the nervous system of the female had to undergo a dual development of the female reproductive system and the brain while the male only had to concentrate on the development of the brain power.

Since this put the female nervous system under a far more severe strain than that of the male, Clarke argued that the female nervous system was particularly vulnerable to any added mental stress. Moreover, since **in** his mind the body could not do two things well at the same time, it was im-

portant that females be free from mental stress in order for the body to concentrate its energies on the development of the reproductive organs. This meant that the mental development of girls should not be a high priority and in fact they be discouraged from studying very hard or doing strenuous mental activities. If girls insisted on studying hard they would put such a strain on their nervous system that both their minds and bodies would break under the stress. He compiled a number of case histories of girl students having mental breakdowns because they ignored their own physiological development. He also found that "educated women" were disproportionately represented in mental institutions while in the case of men it was the uneducated ones most likely to be there. To clinch his case, he gathered hip and pelvic measurements of women who had managed to obtain considerable education and compared it with those who had not, and concluded that intense study in the teens led women to having smaller hips and narrower pelvises in adulthood, making birth more difficult. He went so far as to argue that within a few generations, if American women continued to pursue their education, they would no longer be able to reproduce because their pelvises would be so narrow that no fetus could pass through the birth canal. Science had spoken, the result ultimately would be increasingly larger numbers of childless women and growing populations of female patients in mental hospitals.

"Scientific Proof" Becomes **Self-fulfilling**

Though we can laugh at Clarke today, at least one generation of American women intellectuals worried that Clarke might be right, and it took several generations of researchers to prove him wrong. Even when his ideas were discarded remnants of them remained until almost the 1960's. Part of the difficulty with such "scientific proofs" is that they often become self-fulfilling. Many of his women readers believed him, and worried about themselves, while many male authorities subscribed to his ideas because it fitted their own concepts of what the female role should be. Moreover, some things that society did, made parts of his argument self-fulfilling. For example, women's clothing at the end of the century, with its emphasis on tight fitting corsets and unsupported heavy skirts, actually did handicap female physical development, particularly those women in the middle and upper classes. It also made child birth more difficult. Still this was an interpretation of data in order to serve a social purpose - one we no longer agree with - being inflicted on society in the name of science. What kind of precautions do Humanists need today to make certain that the Clarkes, who are ever present, not impose their prejudices as if it were science.

Unfortunately, Clarke is not an isolated example. The Social Dar-

winists of the later part of the nineteenth, first part of the twentieth century, are another good example. Disparities between countries or people in religious, artistic, scholarly achievement, economic advantage were seen in terms of survival of the fittest or what we now call genetic factors. Whole societies and peoples came to be regarded as scientifically inferior and this inferiority was used to justify European (and American) dominance over the rest of the world. It was particularly strong in eugenics which, when tied in with Althusian theories, gave rise to a kind of racism which ultimately resulted in mass sterilizations and the holocaust on the European continent as well as segregation and racism in the United States. Though free thinkers such as Karl Pearson (1888), who were in the forefront of the eugenics movement, avoided the extremes to which the Nazis took the idea, they themselves subscribed to some of the concepts of inferior peoples common to the scientific thinking of the time. This only emphasized that Humanists need to keep in mind some general values such as the importance of the individual, to avoid falling into the kind of scientific trap that captured some of the early twentieth century Humanist precursors. Misuse of scientific data continued to occur. A good example is the attempts of psychoanalysts in this country to classify peoples such as homosexuals as deviant, undeveloped, and ill, on no other basis that they do not conform to societal norms (Lewes, 1988).

Though we can claim that these results derived from a misuse of science, they were not due to a failure of science. At the time these ideas were being advanced there seemed to be considerable scientific backing for them. If Humanists are to rely upon science and free inquiry in order to furnish data for our postulates, we have to make certain that we are not misusing science or that the science we are utilizing is not being filtered to us through biased cultural assumptions and observations. The danger is that Humanists in their use of science often appear to be no different than in the way that expert testimony by psychiatrists and psychologists appear in court cases. Each side has its own expert witnesses who derive different conclusions from the same data base. In short we can be put in the same quandary as the evangelists and fundamentalists of today, in that we can be accused of accepting science (or the *Bible* in the case of the evangelists and fundamentalists) when it suits our purpose but ignoring it when it does not. The way to escape this is not to rely upon that ambiguous term "science" but the methods of science, to insist on the need for replication of findings, and until the evidence has been accumulated, to avoid making universal generalizations from specific data. In short, we need to be skeptical even of so called science, questioning the obvious, and always cognizant of the biases under which we operate.

It is not only the "evidence of science" we have to be cautious about, it is our own tendency to make generalizations. We have stated that Humanists take as their center piece the notion of dignity and from this point challenge all relationships, including relationship to one's self, that may be characterized as elevating indignities by demanding, debasing, violating, others or one's own self. Is this practical as a universal principle for us?

As a nurse, I have heaped indignities upon individuals in a hospital setting in ways which I need not mention but is this not essential at times in the healing process. We elevate indignities at this time over the individual because we think they serve a higher purpose but I have been cursed, shouted at, and hit by patients. I accepted this because I felt I was helping the patient in the long run. But this same attitude that I have expressed, can also lead a health care professional into committing all kinds of abuses in the name of healing. The use of electric shock treatment, the removal of adrenal glands, castrations, and any number of other demeaning, debasing, and acts of personal violation, have all been carried out in the belief that it would benefit the patient. Though we cringe when we read about some of these acts today, it is not so much the abhorrence of the acts which causes these reactions, but because we now believe that such actions in the past were not helpful. Cannot we say the same thing about some of the procedures we use today. In fact, it is quite possible that actions taken by people such as myself will be used by future generations as examples of individuals who used their professional relationships with patients to elevate their own sadistic tendencies in order to debase and violate others. This, in effect, is the accusation leveled against past treatment in mental hospitals in the 40's by Ken Kesey in his novel, *One Flew Over the Cuckoo's Nest*. Similar accusations could be leveled against a whole series of treatments and actions taken by individuals in the past. Does ignorance excuse or should we never debase or demean others under any condition?

Demeaning, Debasing and Violating the Self

More complex is the demeaning, debasing, and violating of one's own self. Are we not projecting our own contemporary values on others here. In the sex field, where I have done considerable research, there was a long tradition of regarding masturbation as a demeaning and debasing act (Bullough, 1976). In the past twenty years, it has come to be regarded as a helpful and useful act. How much guilt did we put on others because of our faulty thinking about what was debasing. How much did we burden ourselves?

In American society today, there is a strong element of masochism. It is based upon the idea that the only way humans can be saved is to suffer and atone for their sins in imitation of the suffering of Jesus. Even many of us who long ago rejected Christian doctrines as a valid base for our own life, and many of us who never had to struggle against such doctrines, have grown up in a society which accepted many of these very ideas. We know or are taught from childhood that good things do not come easy and we must work and suffer for them. We learn to be fearful of proclaiming success or happiness for fear that something will happen. Is this not masochistic?

Humanists are democrats in the sense that we subscribe to the ideals of American culture but are these ideas valid for peoples who have value systems other than liberty, equality, and community. In fact, if one reverses the order slightly, and puts them as community, equality, and liberty, then there are already limitations on liberty which are more akin to the thinking of some non western cultures. In short, even the order in which we place our words becomes important and can convey entirely different meanings.

To summarize, the point I am making is a fundamental one, namely how far Humanists ought to go in spelling out our belief system beyond the generalities we have so far agreed upon. Humanism to me is more of a process of arriving at answers than an answer, and in this sense we should adopt the scientific model. We also need some general principles, theories if you will, with which we can agree. These might be accepted until they are ultimately replaced by others which can be demonstrated to have greater validity but this should happen slowly and with caution in order to verify the challenge. I would continually emphasize that Humanists are seekers after truth, skeptical of easy answers, and though we recognize our own cultural and social limitations, we try to subject our beliefs to critical analysis. But is this kind of answer attractive to vast numbers of people? So far it has not been and this in essence is the Humanist dilemma. Many people seem to want and need absolute answers to life's problems; something which Humanists cannot give. Even if we could there would not be agreement among us. In short, we should emphasize the process rather than the answer. We should look to science for the methods but not thereby end up saying that science proves that Humanist beliefs are right. Science is the best thing going for us in trying to find answers, but it too is evolutionary and the answers will change.

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