The Nature of Science in the Moral Thinking of Chikuro Hiroike

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A preoccupation with science and scientific understanding was central to Chikuro Hiroike's approach to the subject of morality. At the very beginning of his major work, *Towards Supreme Morality*, he tells us that, in seeking a name for the new branch of study he wished to create, he had decided to combine the word 'moral' with the ending '-logy' which 'means science'. He argued that the resulting term 'moralogy' was entirely fitting because,

> What I am now presenting to the world is a new science which is chiefly devoted to a comparative study of conventional morality and supreme morality with respect to their principles, substance and content, but which at the same time aims at a scientific demonstration of their respective practices. (1)

Now, in English, the word 'science' has an extensive range of meanings. It can be used in a very broad sense as a synonym for 'knowledge' or, more commonly today, to denote a particular approach to the understanding of the world that is usually considered to have originated in Europe in the 16th and 17th centuries.

Hiroike seems to be using the word primarily in this second sense, because a 'scientific demonstration' of something is usually taken to be one that is in accordance with the principles and methods of modern, rational science. But this by itself does not convey complete understanding, because even where the word 'science' is used in this second sense, it still covers a very wide area of human activity. We still need to ask what kind of science Hiroike had in mind when he came to create and name moralogy.

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Any discussion of the nature of modern, rational science has to contend with the fact that it is not a single entity, but a dual one. There are essential and very significant differences in its nature and scope depending on whether it is attempting to deal with, on the one hand, the material and mechanistic aspects of the universe or, on the other, with its living and non-mechanistic aspects. In its origins in 16th century Europe and 17th century England, science concerned itself largely with the material world, whether it was the case of the astronomy of Kepler and Galileo, or of Boyle's chemistry or Newton's physics (even Harvey's celebrated discovery of the circulation of the blood was purely mechanistic in conception). It is in this realm, and in this realm only, that scientific laws and scientific prediction arose and were subsequently developed. These features

attracted much of the prestige that came to be attached to the concept of 'science'; to take what is probably the best known example, an important part of the acceptance of Newtonian physics, and of its modification by Einstein, lay in its ability to predict the future behavior of aspects of the material universe. But the ability to predict is possible only when dealing with mechanistic systems that cannot undergo change and development, which are fixed for ever and which therefore exist effectively outside of time (so that the laws of physics, as laws, are no infallible guide to the full potentiality of the future). Scientific laws, and particularly scientific causal laws, then, only hold good for the universe in its material, inanimate aspects. In the dynamism of the animate world they have no commanding place. So mechanistic science cannot fully accommodate life.

When science comes to deal with the living elements of the universe, it is forced to accept a number of restrictions on its powers and scope. The natural sciences properly understood concern themselves exclusively with the past, rather than the future. They are historical sciences, incapable of prediction. It is for this reason that while there may be a theory, there can never be a law of evolution. At best, such a theory can try to account for what has already happened, as far as it can be observed across the vast distances of time from a very imperfect set of remains, and comment in the light of this upon what is visible today. But it can have nothing whatsoever to say about the future, or if it tries to do so, then reliance cannot be placed on its judgments to anything like the degree that is possible with the physical sciences. Simply by the nature of its subject matter, it cannot be otherwise. The inability of the Darwinian theory of evolution, for example, to generate predictions springs, in part at least, from its very essence. That theory seeks to account for the past course of the development of species by a combination of natural selection ('fitness for survival') that acts upon what it describes as 'random mutations'. This last phrase may conceal more than it reveals, but the very randomness that the theory concedes at its core is an admission, a guarantee of its inability to predict. It can with certainty say nothing whatsoever about the future form into which any species will develop, and it most clearly is no guide to the future of the human species. This is not just a matter of the impossibility of predicting the future nature of those 'random mutations' or of the changes in the external circumstances that are held to define 'fitness' (and those external circumstances must be allowed to include the possibility of random catastrophic external interventions such as asteroid strikes). Those are long range factors, and impossible enough in themselves. But even worse is the short term, for if it is to predict successfully, the theory also has to come to terms with the recently acquired capacity of the human race to destroy itself utterly, a capacity denied to protons, neutrons, quarks, or other species of life forms. The theo-

ry of evolution can have no conception of where the human species is going, let alone of whether it will reach its unknowable destination or not.

So to which of these two divisions of science does moralogy belong? Where does it find its closest kin? According to Hiroike, 'moralogy must cover the studies of all branches of natural and mental science that are related to morality and religion' (*TSM*, I, 85). The relevant 'branches' turn out to be large in number and somewhat diffuse in nature, given that

> ...the system of moralogy is based upon the principles of the following branches of science:- geology, physical geography, biology, the theory of evolution, genetics (including the theory of heredity), euthenics, eugenics, ethnography, physiology, psychology, anthropology, ethnology, ethnogeny, archaeology, jurisprudence, phrenology, psychology, sociology, criminology, the history of civilisation, the history of systems of law, the history of political economy, the history of morality, and others. (*TSM*, I, 84)

This is an interesting list, and one that might well create some surprises for readers brought up in a western tradition where it is the custom to make quite a sharp and rigid division between the sciences and the arts. In the West, the term 'science' would be applied to subjects like jurisprudence and the history of civilisation

only with considerable reservations and after a great deal of argument that would still leave many, or most, unconvinced. Even the scientific credentials of the 'social sciences' like sociology would not pass uncontested - and it is worth noting in passing that it was from the sociology of Comte in particular that, according to Hiroike himself, 'at least a part of moralogy stems' (*TSM*, I, 77). But let us for the moment accept that all the elements in this list are indeed sciences. To which of our two branches of science do they belong?

It might be argued that geology and physical geography should most fittingly be assigned to the first category of sciences like physics and chemistry that deal with the material world in a mechanistic fashion. But even here there are reservations. Are accurate predictions really within the scope of geology, even in the far future when the computational powers available to us are many times greater than at present? The advent of chaos theory has revealed the severe limitations that surround the possibility of making precise predictions about the behavior of complex systems with interacting independent variables, such as the climate or the earth's crust. Plate tectonics are at present, and may forever be impervious to accurate prediction. Geology, then, is perhaps confined to explaining the present in terms of the past. Biology also poses a problem, though of a slightly different kind. In its manifestations like biochemistry, it deals with the mechanistic apparatus of life, confining itself to treating living creatures as nothing more than

complicated machines. On these grounds it would seem to belong to our first category. But insofar as it extends its empire into the theory of evolution, it cannot be find a place there. As Gert Korthof noted, in a recent contribution to the debate about 'intelligent design', 'life itself is closely connected to the history of the Earth...[and so] Biology has a significant historical component'. It is biochemistry that is 'an unhistorical science'. (2)

The remainder of the disciplines on Hiroike's list clearly belong to our second category of sciences, and must therefore partake of their inherent limitations in terms of scope and method. They deal primarily with the past, or at most with the present in the light of the past. The future is none of their concern. More than that, the practice of experimentation that forms the core of the scientific method in physics, chemistry, biochemistry and the like is closed to them. One of the indispensable conditions for experimentation in science is the opportunity for replication. The result of an experiment can only be accepted if it can be repeated and verified. But in terms of a theory like that of evolution this is completely unthinkable. The historical sciences that deal with the products of unique sets of circumstances of extraordinary complexity cannot be subjected to any tests of proof in the form of experimentation. They are incapable of providing opportunities for the kind of 'scientific demonstration' or 'scientific proof' that are readily available to physicists or chemists. Rather, they confine themselves to arrang-

ing and interpreting the evidence of the past in an effort to establish a pattern that lends support to an explanatory theory. Such interpretations of the evidence and such explanatory theories are always open to dispute and can never be accepted as more than provisional. By their very nature they cannot carry complete or final conviction.

Facing the challenge of such restrictions was unavoidable for Hiroike when he came to the task of establishing the science of moralogy. Where was it to be situated within the broad framework of the scientific world? What elements from the different sciences already in existence should it incorporate within itself? One of those elements that mattered greatly to Hiroike was causality. He was strongly of the opinion that moral science must avail itself of the notion of causal laws. For Hiroike this was a matter of vital importance, given the nature of the society with which he had to deal. He argued that in the early 20th century, 'both moral education in schools and discourses on religious beliefs have lost their authority in society' (*TSM*, I, 103), and for him the results of this were extremely worrying.

> 'In later years, therefore, it has been the tendency that people in general pay but little regard to such ideas as piety, obedience, adaptability, harmony, nobility, confidentiality, order, class, and control or unity...the world today breeds the germs of social rev-

> olution...Most people...will disregard the great causes of loyalty, filial piety or gratitude; they will love all who have common interests with themselves or those who gratify their selfish feelings...'(*TSM*, I, 5)

Hiroike believed that the root of the problem was that 'the majority of people today are suspicious of the correspondence between moral practice and happiness...It is a great pity...that the effectiveness of moral practice is not accepted by the general public today as a truth.' Proving such effectiveness to people by demonstrating to them the clear and unvarying connection between moral practice and happiness would therefore have results of the highest importance.

> If we succeed...in demonstrating scientifically the effectiveness of moral practice, and in applying the principles to practical cases, and then in increasing the happiness of those who practice morality, I believe that the value of moral practice will be acknowledged socially; and this will shed new light upon the chaos in modern thought, and succeed in bringing forth world peace and happiness for mankind'. (*TSM*, I, 67-68)

Now such an ambition must inevitably locate moralogy in the first category of the mechanistic sciences, in which alone causal laws and predictability can be said to exist. Yet since moralogy

deals with human beings, who are not subject to any purely mechanistic scheme, it would seem inevitably to belong to the second category of sciences, to which the pathway of prediction is closed. So it is clear that if moralogy is to be considered a science, it must be one that is different to any that have previously existed, belonging as it does to both categories simultaneously. Bringing morality within the scope of science means then, in effect, the creation of a science of a new type. What, then, are the characteristics that define it?

The first, and fundamental, point is a belief that the world has a moral structure, in which moral acts (and immoral ones) are inextricably connected with outcomes that are considered to be either beneficial or negative. Hiroike was at pains to deny that such a structure meant that moral conduct should be based on simple calculations of egoistic self-interest. Nonetheless, what matters for the moment is his firm belief in the existence of that structure. Now in talking of such a structure one cannot avoid using the language of causality, of cause and effect, of the connection between an action and its outcome. The use of such language places moralogy, in terms of science, in the first of our two categories. But moral causality is not identical with the causality of the physicist. In the first place, since moral causality deals with human beings, it has to grant admittance to the historical and the unique. This inevitably means that the predictive power of moral causality is much less

precise than that of mechanistic science. Here it shares with the life sciences a fundamental ignorance about the actual shape of the future. It cannot specify what will be the particular results of a particular moral action by a particular individual, simply because, unlike mechanistic science, it cannot predict the future in detail. At the time of taking any moral action, the precise consequences for the individual concerned (and for any observer) are always hidden, unknown and unknowable. Each moral action is therefore an act of trust, and a moral step can only be taken in a spirit of willingness to accept unknown consequences.

Moral causality, then, seems more tenuous than the causality that underlies mechanistic science. But, paradoxically, moral causality is also predicated upon a certainty that must be far more securely grounded and deeply felt than any that is possible in mechanistic science. For it is generally accepted that all the conclusions of science are ultimately provisional, no matter how much reliance may be seem to be placed on any one of them at any particular time. Indeed, this is taken to be one of great strengths of the scientific approach. It is a characteristic of any and all scientific theories that they must be falsifiable, that new evidence must be capable of discrediting them. Doubt, mistrust even, is enshrined at the heart of science. But doubt has no such place in the world of moral causality. It is, in fact, a disabling enemy. Either one has complete trust in the existence of the moral structure of the universe, or else

morality cannot stand. Nor is this a matter of self-interested calculation, of wanting to be assured of a favorable outcome, of petty personal advantage, before deciding to act morally. This merely represents a wish to satisfy the shallow requirements of the atomised individual. The desire that there should be a moral structure to the universe reaches far more deeply into the essence of humankind, and utterly transcends the perceived self-interest of the individual. It reflects, instead, a fundamental, universal and impersonal human belief in, and compelling need for, justice. Without a moral structure, without a belief in ultimate justice, human beings simply cannot sustain themselves - the spirit is deprived of oxygen and it withers away.

So it is that those who have engaged most closely with the nature of morality cannot ultimately dispense with this requirement of a moral structure to the universe, even when they may appear to be doing so. One of the best examples here is that provided by Mahatma Gandhi, who was clearly much influenced by the concept of falsifiability when he set about trying to establish what he described as 'the science of Satyagraha'. (3) He claimed that he was adopting a purely empirical approach, borrowing from science the method of exploratory experimentation, and utilising it as he went about the task of subjecting 'non-violence, celibacy and other principles of conduct' to 'various practical applications'. He was at pains to stress the tentative and provisional nature of his method.

> Far be it from me to claim any degree of perfection for these experiments. I claim for them nothing more than does a scientist who, though he conducts his experiments with the utmost accuracy, forethought and minuteness, never claims any finality about his conclusions, but keeps an open mind regarding them. I have gone through deep self-introspection, searched myself through and through, and examined and analysed every psychological situation. Yet I am far from claiming any finality or infallibility about my conclusions. One claim I do indeed make and it is this. For me they appear to be absolutely correct, and seem for the time being to be final. For if they were not, I should base no action on them. But at every step I have carried out the process of acceptance or rejection and acted accordingly. (4)

From this it would seem that Gandhi's life was indeed a series of experiments conducted in the spirit of science, the results of which could not be properly predicted nor entirely trusted. But this was not the full story, for Gandhi did not in fact cease to believe that there was indeed a moral structure to the universe. As he wrote, 'for me, truth is the sovereign principle, which includes numerous other principles. This truth is not only truthfulness in word, but truthfulness in thought also, and not only the relative truth of our conception, but the Absolute Truth, the Eternal Principle, that is God'. What, in fact, Gandhi was testing, then, was not the existence of the moral structure of the universe, but rather whether his own

understanding of the nature of that structure was accurate. This he could achieve through experimentation, seeking to discover whether particular principles that mattered to him belonged fully to the realm of absolute truth. The problem that he sought to solve through his experiments, then, was not whether, but how to act morally.

Readers of *Towards Supreme Morality* can easily see that Chikuro Hiroike's belief in a moral structure to the universe was neither tentative nor provisional, neither temporal nor local.

> All materials and human affairs in the universe change in form or quality with time and place; but the fundamental principle concerning the development and happiness of mankind never changes with time and place. It is always the same in times ancient and modern, in places east and west...
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> ...the fundamental principle of the of the development and happiness of mankind lies in the practice of morality. What is called orthodoxy in moralogy means to activate the mental and physical capacities in practical life in a purely moral way in obedience to the will of God. This is, indeed, the fundamental principle of the existence, development and happiness of mankind. The fundamental principle itself, therefore, represents a great law of nature which will never change whatever the age, place or situation may be. (*TSM*, III, 216-217)

The 'law of nature' to which Hiroike refers here can be viewed as sharing the essence of the 'Absolute Truth, the Eternal Principle' that Gandhi held to exist at the core of the world. For Gandhi, as we have seen, this 'Absolute Truth, the Eternal Principle' had another name, 'that is God'. A similar identification was made by Hiroike when he wrote that 'We human beings...must observe the universal law of nature which is the will of God'. Both shared, then a fundamental conviction in the existence of a moral structure to the universe, and both were concerned to try to understand it in a manner they regarded as scientific. Despite all such similarities, however, there are also important differences that must be noted if the distinctive characteristics of moralogy as a science are to be grasped.

We have already noted Hiroike's concern with 'demonstrating scientifically the effectiveness of moral practice', which he felt was essential if people were to persuaded to follow the path of morality. What kind of 'scientific demonstration' did he envisage? It was certainly one that differed from Gandhi's experimental approach to the testing of particular principles like non-violence. Such a testing was a matter of the present and the future, and it involved 'deep self-introspection' out of which truth would emerge. Hiroike, too, made self-examination an important part of his practice, but for him the past occupied a place of greater importance than it seems to have done for Gandhi. He assigned vitally significant roles to the sages

of the ancient world (Socrates, Jesus Christ, Sakyamuni, Confucius and Amaterasu Ōmikami) [5] and to the concept of the 'ortholinon' by which the wisdom of the sages was conveyed across the ages to the present. Knowledge of the past was also essential since it was here that proof could be detected of the effectiveness of practising morality, and in particular of practising supreme morality. According to Hiroike, the efficacy of moral practice was revealed in a way that placed it beyond dispute, and once this was recognised, it would have transforming power in the world.

> ...I have been able to verify rationally and clearly the fact that the practice of supreme morality by Amaterasu ?mikami, the ancestress of the imperial house of Japan, is one of the most significant factors responsible for the unbroken line of succession of the house in terms of both the sovereignty of Japan and the prosperity of the family lineage. I have also proved the existence and prosperity of many unbroken lineages of the descendants of those once served the ancestress practising supreme morality under the influence of her virtues: they remain as members of the Japanese peerage surrounding the imperial house. Moreover, I have disclosed the fact that in China the descendants of Confucius and Yan Hui are to be found still living today with high rank and honour. I was quite surprised when I found that the practice of supreme morality had resulted in the perpetuity of descendants of its exponents similarly both in Japan

> and China. At the same time I was strongly convinced of the enormous effect of supreme morality and I could not help realizing, in particular, the great significance of the unbroken line of succession of the imperial family of Japan.
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> Consequently, with the law of causality existing in man's mental activity and conduct, and the practice of supreme morality resulting in the perpetuity of the descendants of its exponents, it is now clear that anybody who practices supreme morality will be able to enjoy happiness to the extent of their practice. It seems to me that such a realization will immediately enhance the power of morality leading to an epoch-making improvement in moral education in the world' (*TSM*, III, 382).

Here again we see the characteristic combination of methods drawn from the two distinct branches of science, the combination that defines moralogy. Insofar as Hiroike is drawing upon historical evidence for proof, his methodology is that of the natural sciences, and it should therefore share all the limitations that are inherent in them. Especially significant here is the limitation that past developments are no sure guide to the unknown future. Thus at the time when Hiroike was writing, the descendants of Confucius and Yan Hui may indeed have been living with high rank and honour. Whether that remained true after the Communist Revolution of 1949 in China is unclear, though. But for Hiroike such evidence fit-

ted into a structure of causality that was common to the mechanistic sciences, in which particular actions had particular causes. Such a conclusion could not be sustained by an appeal to the past alone, though, and so Hiroike had to concern himself with the present, too, in something of the same way as Gandhi was to do.

Part of the 'scientific demonstration' upon which Hiroike relied concerned the results of his own experiences, and those of others who followed in his footsteps. As he wrote, 'from about 1909 onwards, I suffered from a nervous breakdown, contracted as a result of long years of overwork related to my studies. This became one of the stimuli which drove me to concentrate upon religious matters: I planned to acquire the spirit of benevolence, God's universal love, and to cultivate a moral sense of sacrifice and to examine myself in whatever situation I might find myself...' (*TSM*, I, 69). Out of these troubles arose a fundamental change in Hiroike's life, out of which was born a new purpose, a new understanding, and a new way of living. It is this personal experience which he offered as a 'demonstration' of the truth of the science of moralogy, with universal application. In his first introduction to *Towards Supreme Morality*, he wrote that,

> ...all my writings on the subject of supreme morality that this first book of moralogy contains are based on nothing less than what I myself have practised in the

> past. Thus they are not only based on what I have learned from scientific studies but also on what I have aimed at and performed in an attempt to attain salvation by conforming to the mind of the sages at all those critical moments of my life, asking myself how I could truly become happy in such situations. Here, then, is a demonstration of truly reliable laws of human life...Moralogy, indeed, is a science such as every other science may be - simply explaining facts. To those, however, who really wish to understand its significant implications and to practise them accordingly, it will give each a different taste according to the quantity and quality of learning, knowledge, experience and virtue he possesses' (*TSM*, I, 41-42).

This appeal to the truth of personal experience does not at first sight seem consonant with the nature of conventional science, and indeed Hiroike seems to place personal experience in parallel to 'scientific studies', as a complement to them. It is easy to see why this should be so. Science is traditionally understood to be concerned with the external world, its characteristic approach to knowledge is one in which a certain distance between observer and observed must be preserved in order to ensure objectivity. On this view, personal experience is much too subjective to form a basis for true science. But here again, Hiroike, like Gandhi, had a deeply held concern for objectivity when it came to dealing with his own personal experiences. For Gandhi, such experiences were the raw

data of 'the science of Satyagraha', and the handling of such data was to be characterised by 'the utmost accuracy, forethought and minuteness' just as was the case in traditional science. Hiroike embarked on his own research in a similar spirit of self-discipline, cautioning his readers to remember that 'I am adopting a disinterested attitude towards study, both in principle and in method, to undertake a purely scientific investigation'. Such a 'disinterested' spirit was a guarantee of the scientific character of his work, even when he was dealing with the subject matter of his own experience. Beyond that, the fact that the beneficial effects of supreme morality could be experienced by anyone who successfully practised it was another guarantee of the objective truth that it enshrined. Such proof was the equivalent of an experiment in the traditional sciences, always with the proviso that not everyone was qualified to undertake it successfully.

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We have seen that moralogy's claim to be a science requires careful explanation. It does not fit neatly into either category into which science, as it has developed since around 1500, is to be divided. Rather, it combines elements from each on these categories, taking from mechanistic science a preoccupation with causality, while at the same time seeking to explore the nature of moral

causality under the constraints within which the natural sciences are forced to operate. Furthermore, it carries its explorations into areas that lie outside the traditional domain of science, taking personal experience as material fit for study, and treating such experience in the disinterested spirit that is usually felt to be characteristic of science. For these reasons it is easy to understand why Hiroike himself chose to refer to it as a 'Special Science' (TSM, I, 49).

〈References〉

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2. Korthof, G., 'Does Irreducible Complexity refute neo-Darwinism?', http://home.planet.nl/~gkorthof/korthof8.htm (accessed on 13 March 2003).

3. Gandhi, M., *Autobiography - The Story of My Experiments with Truth*, xii. This work, originally published in Gujarati in two volumes (1927, 1929) by the Navajivan Trust, is now conveniently available in an English translation at http://www.mahatma.org.in/index.jsp.

4. Ibid., x-xi.

5. See *TSM*, II, 147