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Editor D. P. CHATTOPADHYAYA

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Contents

Limitations of science*

SURENDRANATH DASGUPTA

In the *Chambers's Technical Dictionary*, science has been defined as 'the ordered arrangement of ascertained knowledge including the methods by which such knowledge is extended and the criteria by which its truth is tested'. The older term 'natural philosophy' implied the contemplation of natural processes in themselves. But modern science means, among other things, study and control of nature as is or might be useful to mankind and also proposes how possibly man can control his destiny. Speculative science is that branch of science which suggests hypotheses and theories and deduces critical tests, whereby unco-ordinated observations and properly ascertained facts may be brought into the body of science proper.

Philosophy, in its widest sense, means 'the explanation of any set of phenomena by reference to its determining principles whether practical, causal or logical'. Any theory or reasoned doctrine, in this sense, may be called 'philosophy', and 'natural philosophy' would be 'physics'. But sometimes it is used, with a clear ethical implication, as the power and the habit of referring all events and special facts to some general principle and of behaving in the light of this reference. It thus means the working theory of things as exhibited in conduct. Thus, we say: even in dire misery he uses his philosophy. It means that the person has, in his mind, a reference to certain general principles which enable him to endure and suffer calmly which would otherwise excite emotional disturbance.

In another sense, 'philosophy' means 'an account of the fundamentally real so far as from its consideration laws and truths may be derived applying to all facts and phenomena'. In this sense, 'philosophy' is called metaphysics. The word 'philosophy' is also used to denote a theory of truth, reality or experience taken as an organized whole which gives rise to general principles unifying various branches of experience into a coherent system. Gathering together the various elements which constitute the connotation of philosophy, it may be defined as a theory of a subject-matter taken as a whole or organized, unity containing principles which bind together a variety of particular truths and facts, and requiring a certain harmony of theory and practice.† Philosophy has also been defined as a rationalization of experience taken comprehensively in its totality.

If we compare the definition of science as given above with that of philo-

*This hitherto unpublished paper of the late Professor S.N. Dasgupta (1885-1952) is being published with the kind permission of his wife Dr. (Mrs.) Surama Dasgupta.—EDITOR.

†See Baldwin's *Dictionary of Philosophy*, pp. 190-91.

sophy, it will be noticed that there is essentially but little difference between the two except that the word 'philosophy' is often associated with the enquiry regarding the ultimate nature of the world in its aspect of reality and unreality, whereas the word 'science' is conventionally confined to the study of the aspects of physical phenomena and the nature of their coherence. Physical phenomena are often susceptible of being accurately measured. But in the study of science we do not merely take account of the elements that can be measured but also elements that cannot be measured. Thus, when a chemist says that chlorine is a yellow gas of pungent odour, the character of yellowness or that of the pungent odour cannot be measured. Again, when we note the different shades of colour and associate them with vibrations of different wave-lengths, the nature of different colours and their shades cannot be measured in any accurate sense. As a matter of fact, the sense qualities as such—particularly the secondary ones, e.g. colour, taste, touch, smell and audition—cannot be measured with any degree of accuracy. But yet our sense observation is a fundamental instrument for the study of science.

Philosophy aims at grounding itself not only on sense observations and reasoning as science does, but proposes to collect its data from the mental world as well, viz. our ideals and aspirations, pleasure and pain, our sense of good and bad, our faith and, on the whole, the totality of man in his relation to nature and sometimes to something beyond them both, which may be required as a fundamental assumption for the explanation of the two series of facts. It also includes within its purview the biological facts of life in its relation to its physical basis, on the one hand; and on the other, its fulfilment in the case of a civilized man in a cultured society along with the multitude of social facts that determine the character of man and his destiny. While consistency and coherence is its soul as an enquiry into the nature of truth, it may often have a practical bearing. The practical bearing or the pragmatic side of philosophy involves a co-ordination of such conduct and the maintenance of such perspectives as are consistent with the philosophical view that one may hold regarding one's relation with nature and the society of man. Thus, though its scope is much wider and though at the same time its data cannot often be measured, it is an ordered arrangement of ascertained knowledge including the methods by which such knowledge is extended; and it does involve the determination of criteria by which its truth is tested. It also involves, as has already been said, a pragmatic reference to man's relation with his environment, and it is not indifferent to the attainment of one's higher aspirations. Like speculative science, it suggests hypotheses and theories and tries to deduce, though sometimes rather vaguely, critical tests whereby uncoordinated observations and properly ascertained facts may be brought together into harmony. The vagueness is due to the fact that most of the data of philosophy, on account of the very wideness of its scope of generalization, are not capable of being measured. Both science and philosophy have, however, to start from common sense knowledge that is derivable from sense

experience. Since science is engaged in the study of the physical appearances of things, it is often claimed that it is more harmonious and more in consonance with common sense knowledge than philosophy. Thus, for instance, most systems of idealistic philosophy would regard the common sense world as being, in some sense, illusory, while we have a normal predilection to think that science preserves for us our experience of the common sense world as tangible and undeniable.

Let us dig a little more on this point. In our naive common sense view, we think of matter as possessing certain attributes such as colour and sound which we directly perceive. But in the seventeenth century the theories of light and sound gave a rude shock to our common sense view of substance and attributes. A scientist would tell us that the rose is not red but that it transmits something into our eyes, some waves or minute particles, and it is for that reason that we see colours. But science cannot deny that it hardly gives us a coherent account of perception of sense qualities without dragging in the relation of mind about which science, because of its selective approach, is relatively indifferent. No scientist can assert anything regarding the existence of mind, and this entity is not observable either by senses or by any of the scientific instruments. Among philosophers also there is a divergence of opinion regarding the existence of mind as an entity, and the present writer does not believe in the existence of mind or soul as substantial entities. It is, therefore, illegitimate for science to postulate the existence of mind or the interpretation of the phenomena of experience. In the philosophy of natural science no doctrine of any metaphysical import, involving any explanation of the 'how' and 'why' of thought and sense awareness, is to be sought beyond nature. Science is not metaphysics, and any enquiry into reality involving the perceiver and the perceived is beyond its scope.

Before proceeding further, I wish to explain the meaning of two terms which I may have to use in course of this discussion: (i) sense-data—colours, sounds, scents, etc.—as they objectively exist outside of us as revealed in the commonsense perception, and (ii) sense-awareness meaning our internal and subjective knowledge of these sense-data. We start with the postulate that, in dealing with physical science, we cannot countenance any theory of psychic additions to the objects known in perception, such as, the green grass. A theory of psychic additions would not hold that the green grass, the white flower and the like are outside of us. On the contrary, it would hold that 'green' and 'white' are mental additions, and what exist outside are the molecules, the atoms and the electrons. But, as a rule, the scientists indulge in the splitting up of nature into two domains—the domain of physical existence consisting of energy units or energy waves and the domain of psychic existence consisting of our sense-awareness and implicit denying external existence of sensedata. What is given to the scientist is the element of sense-awareness. From this science passes on to affirm the reality of entities of an entirely different order—such as, molecules, energy levels and the like—though it is unable to relate

the order of sense-awareness, i.e. the psychic order, to the physical order with which it proposes to deal. This divides nature into two different orders: (*a*) as apprehended in awareness, and (*b*) as the cause of awareness; and the two are incommensurate with each other, for neither the theory of conservation of mass nor the theory of the conservation of energy can explain their causal identity. No doctrine of causal transformation can explain the influence on the alien mind whereby perception of 'redness' or 'warmth' can be explained. We cannot explain why there is knowledge. The causal enquiry into the nature of knowledge is a metaphysical chimera. It is extremely difficult to connect, in terms of any intelligible relation, the sense-awareness of 'warmth' and 'redness' of the fire and the agitated molecules of carbon and oxygen and their radiant energy in the various functionings of the material body. Until these two can be brought into one system of relations, we have a division of nature into two worlds, of common sense experience and the scientific perspective, reducing everything into units of energy and their relations.

Let us now see how our ordinary notions of time and space can help us in the matter. It may be urged that perceived redness of the fire and the warmth have definite relations in space and time with the molecules of the fire and the molecules of the body. We may take the absolute view of space and time. In this view, time is the ordered succession of durationless instants which are known to us as the *relata* in the serial relation which is the time-ordering relation, and the time-ordering relation is merely known to us as relating the instants. This time is known to us independently of any events in time. What happens in time occupies time. The relation of events to time occupied is a fundamental relation of nature to time. We are aware of two fundamental relations: the time-ordering relations between instants and the time-occupation relation between instants of time and states of nature which happen at those instants. Our thoughts are in time and so also are the events of nature. Each instant is irrevocable. It can never recur owing to the very nature of time. But if, on the relative theory, an instant of time is simply a state of nature at that time and the time-ordering relation is only the relation between such states, then irrevocableness of time would seem to mean that an actual state of nature can never repeat itself. This may be very likely the case but it cannot be demonstrated by proof; and, thus, such an irrevocableness of time would also be undemonstrable. But in the former case the irrevocableness of time is regarded as a character of time.

In the absolute theory of space, space is a system of extensionless points which are the *relata* in space-ordering relations. The axioms of geometry deal with the essential logical characteristics of this relation from which the property of space follows. What happens in space occupies space, and this is true as much of an event as of objects. We have here also two fundamental relations: the space-ordering and the space-occupying relation. But space does not extend beyond nature in the sense in which time does. Our thoughts seem to be in time but not in space. We cannot talk of a thought as occupying so

many cubic feet or cubic inches. The irrevocableness of time has no parallel in space. Moreover, we do not seem to have any knowledge of bare space as a system of entities, known to us in and for itself, independently of our knowledge of the events of nature. Space, thus, seems to be an abstraction of a particular type of unique relation prevailing among natural objects.

It may now appear that the cleavage, which was brought about between our experience of the common sense world and the world of science, may somehow be bridged over. The two worlds may be supposed to occupy the same space and the same time. We may consider that the causal molecular events occupy certain periods of the absolute time and space, that these molecular events influence the mind which thereupon perceives certain colours, sounds, etc. and that this perception occupies certain periods of time and positions of space. Hallucinations occur when there are certain perceptions occupying periods of time and positions of space without the influence of the causal molecular events relevant for producing such perceptions.

Here we are trying to explain the 'why' of knowledge, i.e. the cause of knowledge, and not the 'what' or the character of the thing known. It is also assumed that we can know time in itself apart from the events related in time and also know space apart from events related in it. A question may further be raised: why causal nature should occupy time and space, why the cause that influences the mind to perceive certain characters should have the character of the objects or events of nature. Or, in other words, the important question that arises is: whether the influence of nature on the mind should itself be a natural event of which we affirm time and space. What does the physicist know about the mind that can lead him to infer that it can be influenced to produce particular effects of a spatio-temporal order? Our thoughts may occupy time but the thoughts are not mind. We never perceive that our mind is occupying particular periods of time. In any case, even thoughts do not occupy space. Under the circumstances, how can it be supposed that the influence, transmitted by the spatio-temporal molecular events to the molecular structure of the body, can lead the body to exert a spatio-temporal influence on mind which is neither in time nor in space?

Science may be supposed to be engaged in discovering the character of apparent nature or nature given in perceptual knowledge, and in doing so it tries to unravel the complex relations between certain energy levels or energy units or molecules or atoms, which, given the body and the mind in working order, invariably precede certain types of perception. But it cannot be urged again and it cannot be demonstrated that the perception of colour or the sense-awareness of colour, as occupying a particular space and time, is exactly the same as the space and time in which the molecular events had occurred in the physical world. This short analysis tends to show that the world of space and time, as revealed in common perceptual experience, cannot be demonstrated to be the same in which the invariable antecedents as the intra-molecular or the intra-atomic events take place in the physical world.

The apparent nature or nature as we perceive appears to be like a dream, and the apparent relations of space are dream relations. The supposed causal events in the physical world belong to a causal space which has a different order of reality to the space of ordinary perception. It is, thus, impossible to demonstrate that the molecules of the grass exist in any place that has any determinate spatial relation to the place occupied by the grass we see. Thus, from a wholly different order of reality as given in sense-awareness occurring probably in a spaceless, timeless manner or in an order of time and space of a unique character, the scientist draws his conclusions about an entirely different order of intra-molecular or intra-atomic activity in an entirely different order of time and space, of which we have no direct knowledge and which is not inferable either, for all inference assumes a known relation in a system of relations of a commensurate character. Science tells us that it only can claim the discovery of truth and that common sense perception is false. If that is so, how can science claim to pass from this falsehood of common sense perception, which alone is given to the scientist, to the discovery of truth? From the nature of the case there cannot be any instance in which scientific observations can be made with the perfect elimination of all sense knowledge. Yet, in this way alone, could we have determined the structure of falsehood as enveloping the kernel of truth. Even if it be assumed that the molecules and atoms of science are purely of a conceptual nature and that there are no such entities in nature, it would be difficult to say how any proposition of science can be applied to nature. We, thus, see that in producing a split between the world given in our sense-perception and the world given in science, science has succeeded in giving us a system of illusions having coherence in themselves even as the most extreme idealists, the propounders of *māyā*, would do. But it cannot claim to have advanced far in the direction towards the discovery of truth as establishing a valid system of relations between the data of knowledge and the knowledge acquired.

The definition of science quoted by us that 'it means the ordered arrangement of ascertained knowledge including the methods by which such knowledge is extended and the criteria by which its truth is tested' thus falls to the ground. It is no doubt an ordered arrangement but it has no ascertained knowledge. It can, indeed, apply methods by which such knowledge as it possesses can be extended, but as it fails to combine its knowledge in a system of relations—spatio-temporal or otherwise—with the actually observed facts, it lacks coherence and, therefore, the knowledge it gives is only a system of illusions. It can apply no other criteria of truth than what is available within its own system of relations. It is no doubt true that in some cases it may, to some extent, indicate certain relations that it has with observed facts; but it can seldom do it with any degree of accuracy or preciseness for the simple reason of the indemonstrableness of the spatio-temporal structure of the two orders, and also because of the fact that sense characters are not measurable with any degree of accuracy.

The scope of the essay is, indeed, limited and it is impossible for me to treat the question of the character of scientific knowledge in further details from various points of view. But still I may cursorily make certain observations. Science is supposed to deal with matter and energy. Referring to the same *Technical Dictionary*, I find that matter is defined as 'the substances of which the physical universe is composed'. Matter is characterized by gravitational properties and by indestructibility under normal conditions. Mass is defined as 'the quantity of matter in a body,' and is also regarded as equivalent of inertia or the resistance offered by a body to changes of motion (i.e. acceleration). Energy is defined as 'the capacity of a body for doing work'. Mechanical energy is called potential energy by virtue of the position of a body, and it is kinetic energy by virtue of its motion. Both mechanical and electrical energy can be converted into heat which is regarded as another form of energy. Electricity is defined as 'the manifestation of a form of energy believed to be due to the separation or movement of certain constituent parts of an atom known as electrons'. Velocity is 'the rate of change of position or rate of displacement expressed in feet or centimetres per second'. Velocity is a vector quantity, i.e. 'for its complete specification, its direction as well as magnitude must be stated'.

After these definitions, we proceed to take a ramble in the domain of speculative science. The definition of matter as substance carries us nowhere until we know what the nature of substance is. I am not aware if physics has in any place tried to dig deep into the concept of substance. But, at any rate, we find from the definition that matter is the substance of which the universe is made. Yet, in the final analysis, we are told that the ultimate constructive element, of which the electrons are manifestations, are themselves non-material waves. Thus, in giving an account of the ultimate matter-waves, it has been clearly affirmed that it cannot be any kind of matter that is vibrating, for the corpuscles of matter, the electrons, are actually constituted out of waves in some other natural medium. Schrödinger assumes that the waves measure by their strength the density of the electric charge possessed by matter and electron. This charge is, therefore, no longer to be imagined as concentrated in the body of the electron but rather as distributed over the whole wave-structure which is extended without limit but falls off rapidly as we go from the electron like the sand on the vibrating place. We no longer have corpuscles—they are now resolved into a 'charged cloud'. The electron regarded as a negative charge had already dematerialized itself into a form of energy. It is not a charged particle but a unit of negative charge. Now we are told that the electron is properly manifested by certain waves at the point in which the charge is the densest. Yet it is definitely asserted that these waves are not waves of matter. It is said that they are waves in some other medium. But what is that medium? Throughout the whole course of physics we have been talking of matter and energy, and all of a sudden we begin to talk of waves in some other medium. But we do not know of any other medium. Energy

had been defined as a capacity of matter to do work. With the reduction of matter into energy as electrons the capacity of a substance becomes identical with substance, which is contradictory. It virtually amounts to a complete sacrifice of the doctrine of substance. Again, capacity is an abstract quality. And if this is so, how can this abstract quality be regarded as concrete energy having particular structural forms? And how can we conceive of non-mental structural forms which are devoid of matter? With the demolition of the doctrine of substance, the definition of mass as quantity of matter also falls to the ground. Yet we are told that, in the presence of mass, there is a contortion in space in four dimensions. As a matter of fact, we hear the physicists talking of n dimensions, or as many dimensions as they please. But what relations have these dimensions to the space that is observable by us? Surely, this multi-dimensional space must be entirely different from the space that we know. If that is so, by what right and by what stretch of extreme imagination can we call that multi-dimensional x space space at all? It may be true that by tensor calculations one can reduce the structural qualities of any-dimensional space to any other dimension. But what guarantee is there that this imaginary mathematics consisting of transformations and computations leads us to the same order of reality ? It is true that the physical order of reality can be referred to in the mental order in terms of thoughts and images. But do they belong to the same order? One may dream in a mutilated manner of one's past experiences and inhibitions, and the psycho-analysts tell us that there is a definite law, according to which our inhibited experiences of the past are transformed into dreams. They further tell us that this law is so definite that, through the indication of dreams, one may decipher inhibited past experiences, and thereby treat successfully patients suffering from mental derangements. But can we, on that ground, identify dreams with actual experiences as belonging to the same order? Again, if space means anything, it means an unalterable series of proximate points extending in all directions; and if this be the notion of space, the notion that space is something that can suffer real contortion must be wholly unintelligible to us. Our ordinary perception makes it quite clear to us that space is entirely different from time; and if this time be regarded as dimension of space, surely we are not talking in any common sense manner. It may be argued that, sense or nonsense, we can work it out in terms of mathematical relations. I shall certainly bow down my head to the great majesty of that science, but I should be quite unable to harmonize that mathematical world with the world that is given to us in our common sense experience. It is not enough to say that the common sense world bears some relation to this mathematical world as even a ghost would bear a relation to human beings, but all the same I cannot help feeling that a ghost is ghostly and not human.

The determination of velocity and position has been for long deemed as one of the most important functions of physics. But however accurately it may do so in the sphere of big bodies, it cannot do so satisfactorily in the case

of electrons. This incapacity is not such that with better instruments it may ever be hoped that it might be done, but the physicists have given up all hope in this direction and nature has declared her line of halt. This forms, on the one hand, the foundation of the Quantum Theory and, on the other hand, has led to the formulation of the Wave Theory. Classical physics was wrong in believing that bodies existed to which a definite value of energy and hence impulse and velocity would be ascribed without, at the same time, their position and the length of time they were under observation being known. This is not true in the small dimensions given by Planck's constant h. On the contrary, of the quantities named are always known inaccurately. If we increase the accuracy in one direction, the inaccuracy in other directions is increased. So both are known only inaccurately. This uncertainty principle has led the present-day scientists to advance the picture of the ultimate constitution of electrons by the hypothesis of waves. The elementary quantum of action h is now seen to be measure of the ultimate accuracy with which measurements in space and time of energy, impulse and velocity can be made. It sets us a limit, in principle, to the mutually consistent application of these concepts. Physicists had so long been innocent enough to believe that these concepts were valid everywhere in the world without restriction. They were imbued with a pre-conceived idea that the concepts of the ordinary physics were universal.

All that we have said does not mean that science is a fairy tale. It only means that the investigations of science aim at determining truths of a particular order, which are neither universal in all their aspects nor compatible with the knowledge that may be gained from other sources or from other types of studies and investigations. Science shares with other studies its incapacity not merely of a temporary nature but affecting the grounds of any hopes of delving deeper into the mysteries of its own order of truth. As in the case of other studies, so here also in science we have been able to discover the limits which nature has set to extending the bounds of our knowledge. It has further been claimed, on behalf of science, that it is independent and does not depend upon conceptions that may be formulated in other branches of the study, say, religion and philosophy. We shall now examine this claim as briefly as we can.

We shall not try to distinguish in what we say any difference between what may be the ideal verdict of science and the statement of great scientists. Jeans in his work, *The Mysterious Universe*, first tries to rouse terror and awe in us by giving us a picture of the mightiness of the universe and then says:

> If, however, we dismiss every trace of anthropomorphism from our minds, there remains no reason for supposing that the present laws were specially selected in order to produce life. They are just as likely, for instance, to have been selected in order to produce magnetism or radio-activity—indeed more likely, since to all appearances Physics plays an incomparably greater part in the universe than Biology. Viewed strictly from a material stand-

> point, the utter insignificance of life would seem to go far towards dispelling any idea that it forms a special interest of the Great Architect of the universe.

The contradiction in the above passage is obvious even to a cursory reading. On the one hand, Jeans dismisses every trace of anthropomorphism and, on the other hand, he speaks of a Great Architect as having selected certain physical laws for the occurrence and possibility of the happening of other physical laws, such as, magnetism, radio-activity, etc. Again, Eddington seems to believe in a strange anthropomorphic female nature whose relation to God or to the Universal Mind he never seems squarely to face. Thus he says in his, *Science and the Unseen World*:

> 'Looking back over geological record it would seem that Nature made nearly every possible mistake before she reached her greatest achievement—man.... At last she tried a being of no great size, almost defenceless, defective in at least one of the most important sense organs. One gift she bestowed to save him from threatened extinction—a certain stirring, a restlessness in the organ called brain, and so we come to man'.

Again, in discussing the Indeterminacy and the Quantum Theory he obscures the discussion when he says: 'Future is not predetermined and Nature has no need to protect herself from giving away plans which she has not yet made.' The anthropomorphic tendency is clear and obvious. Jeans definitely offers us an argument for the existence of God and for the spiritual nature of the universe drawn from the present stage of physics. Jeans gives the following quotation from Berkeley, an idealistic philosopher:

> 'All the choir of heaven and furniture of earth, in a word, all those bodies which compose the mighty frame of the world, have not any substance without the mind....So long as they are not actually perceived by me, or do not exist in my mind or that of any other created spirit, they must either have no existence at all or else subsist in the mind of some eternal spirit'.

After this quotation Jeans says: 'Modern Science seems to me to lead by a very different road to a not altogether dissimilar conclusion.' In another place Jeans states: 'We cannot claim to have discerned more than a very faint glimmer of light at the best; perhaps it was wholly illusory, for certainly we had to strain our eyes very hard to see anything at all'. Eddington also writes in *The Nature of the Physical World*: 'The idea of Universal Mind or logos would be, I think, a fairly plausible inference from the present state of scientific theory'. He immediately adds:

> But if so, all that our enquiry justifies us in asserting is a purely colourless Pantheism. Science cannot tell whether the world spirit is good or evil and its halting argument for the existence of a God might equally well be turned into an argument for the existence of a Devil.

Max Planck, in the conclusion of his work, *The Philosophy of Physics*, says:

> It is only when we have planted our feet on the firm ground which can be won only with the help of the experience of the real life that we have a right to feel secure in surrendering to our belief in a philosophy of the world based upon a faith in the rational ordering of the world.

I do not wish any further to dilate upon this theme in this short paper. I wish only to point out that some of those thinkers at least, who have transcended the purely provincial limits of the study of the physical science, have been forced to admit that it must have a bigger and broader aspect through which it can affiliate itself with the other departments of knowledge, such as psychology, philosophy, religion and ethics. After all, the attempt of science is through a system of happy guesses. In the words of Einstein:

> Physical concepts are free creations of the human mind, and are not, however it may seem, uniquely determined by the external world. In our endeavour to understand reality we are somewhat like a man trying to understand the mechanism of a closed watch. He sees the face and the moving, hands, even hears its ticking, but he has no way of opening the case. If he is ingenious he may form some picture of a mechanism which could be responsible for all the things he observes, but he may never be quite sure his picture is the only one which could explain his observations. He will never be able to compare his picture with the real mechanism and he cannot even imagine the possibility or the meaning of such a comparison. But he certainly believes that, as his knowledge increases, his picture of reality will become simpler and simpler and will explain a wider and wider range of his sensuous impressions. He may also believe in the existence of the ideal limit of knowledge and that it is approached by the human mind. He may call this ideal limit the objective truth.

In conclusion, I wish to affirm that though science and mathematics in their surprisingly new achievements have discovered many new facts and relations in the world of nature, yet they belong to a particular order and cannot be regarded as having any more superior value than other branches of study. Their discoveries have their limits, and they have as much contradiction in their own orders as the other branches of study have in their particular orders. Science neither attempts nor has shown any way by which all our experiences can be brought together under one system of relations, such as, the belief of the scientist in the rational nature of the world might lead us to expect. This

simple faith of the scientist, so emphatically stressed upon by Max Planck that the real is the rational, is also the fundamental basis of philosophy and religion. Like a horse with flaps on its eyes the scientist has been wending along an interminable road until he meets obstructions and turns to the right or to the left; but should he take his flaps off and look around, he could only then understand what a small area the traversing road is in the huge and broad landscape that lies all around him. Let the scientist remain satisfied in all humility with the service that he has rendered in his own humble way.

Second thoughts on Landé's blade

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Some thirty years ago Alfred Landé, the distinguished critic of the Copenhagen interpretation of quantum mechanics, presented a new argument for physical indeterminism (1953). This was taken up by Karl Popper, who called it 'Landé's simple but beautiful argument' (1982, p. 101). That Landé himself considered his argument to be of decisive importance is attested by the fact that he reissued it on many occasions (1955, 1958a, 1958b, 1960, 1965). Popper's (1982) had been available to me in galleys when I wrote my (1974) contribution to Schilpp (1974). This contribution contained a long section on indeterminism, and in it Landé's argument figured prominently; for I too found this cogent and important. One of its merits, in my eyes, was that, despite its author's primary concern with quantum mechanics, it starts out from random, or seemingly random, sequences at the *macro*-level, and does not rely at all on micro-indeterminacies. Then came the late J.L. Mackie's (1978) review article of this Schilpp volume. Mackie was scornfully dismissive of this argument. We met afterwards, and discussed it at length. In the end I capitulated; he had persuaded me that it is invalid.

Since Landé's argument had not, I think, attracted much notice outside the Popper circle, it might seem that a quiet burial, perhaps in the form of a brief note of retraction, is all that is called for. But I hold that something important can be retrieved from it. For there is an *analogue* of this argument, employing essentially the same strategy, that seems to me both to be valid, and to constitute one of the strongest arguments, perhaps the strongest argument outside quantum mechanics, against physical determinism. We need to see just where the original argument went wrong in order to find out whether this analogue of it goes correspondingly wrong. I will claim that it does not. I will set out Landé's argument in Section I, Mackie's objections in Section II, and in Section III I will present what I believe to be a viable analogue of it.

I

Landé's argument went like this. There is a chute down which billiard balls can roll unswervingly. Beneath the chute there is a blade onto which the balls will fall. We have done our very best to position the blade centrally beneath the chute. We inform a physical determinist that we are shortly going to release, one after another, 1000 balls down the chute, and we ask him whether he is prepared to make any predictions as to how the balls will fall off the

blade. One part of the reply that we will expect him to give is that he cannot make any prediction concerning any individual ball; for although it will have been causally determined to fall off either to the left, or else to the right, by little asymmetries in the set-up, he is ignorant about these. If we ask him whether he is prepared to make any *statistical* prediction about the falling out of the balls, he *might* reply that, just because of his ignorance concerning the causally decisive little asymmetries that will determine each ball's fate, he can make no prediction at all. We will revert to that possible answer later. But let us assume that he replies, as we would rather expect him to, that he is prepared to predict that approximately half of the balls will fall off to the left and the others to the right. We point out that, on his assumptions, this amounts to the prediction that approximately half of the causally decisive little asymmetries will be left-inclining and the others right-inclining; and he accepts this. Let l denote a ball falling off the blade to the left and let l' denote the immediate left-inclining causes of l. We further point out that, according to physical determinism, the factors constituting l' will in their turn each have immediately preceding causes, the totality of which we may denote by l'', and so on. According to physical determinism, the physical state of the universe one billion years before the occurrence of a particular l causally predetermined, in conjunction with the laws of nature, a sequence of world states that would eventually include...l'', l', and l. Call this ancestral state L. And similarly, for a ball that falls off to the right, denoted by r, there will be an ancestral state R that causally predetermined a sequence of world-states that would eventually include...r'', r', and r. Thus if, when we start releasing the balls, we should happen to get an initial sequence of outcomes *rlllrr*, that would mean, according to physical determinism, that in the distant past there was a sequence of world states *RLLLRR*.

More specifically, *if* our physical determinist is willing, as we are at present supposing, to predict an approximately 50:50 split of the outcomes into l's and r's, then he is thereby obliged to *retrodict* an approximately 50:50 split of world-states in the remote past into L's and R's. But why, we ask him, should the universe one billion years ago have been so nicely geared to the exigencies of our Landé-blade set up now? Whence this pre-established harmony? Landé suggested that a 'hard' physical determinist, who denies that there has ever been any physical indeterminacy in nature, could answer this only by introducing a theological conspiracy-theory: God saw to it that, for each seemingly random sequence generated by the flipping of coins, spinning of roulette wheels, or whatever, the initial state of the universe would ensure that the causally predetermined, individual outcomes constituting such a sequence would collectively exhibit the appropriate kind of statistical regularity. In my (1974) contribution I called this an 'artesian well' theory of random sequences. If we possess a 'randomising' set-up, such as a roulette-wheel or a Landé-blade, we appear to be able, by activating it, to generate pockets of randomness; but the reality, according to physical determinism as here interpreted, is rather that we are tapping underlying causal chains nicely prearranged to give an appearance of randomness when tapped.

I suggested in (1974) that the only way for a 'hard' physical determinist to avoid encumbering himself with the problem of a pre-established harmony between causal determinants lying in the remote past and the statistical regularities we expect in the future when a 'randomising' set-up, such as our Landé-blade, is activated, is to disown his right to make statistical predictions. He might say, as I mentioned above, that just because he is incurably ignorant of the unobservable asymmetries that will determine each fall, he can make *no* positive prediction in such a case. True, he has no reason to expect more l's than r's or vice versa; but that does *not* mean that he *has* reason to expect an approximately 50:50 split. This answer avoids the foregoing objections, but at a heavy price. Casino-owners and others assuredly do base statistical predictions on a suitable knowledge of the unbiassed, or possibly biassed, structure of a 'randomising' set-up, and such predictions are very largely borne out; yet they are quite impermissible, according to this alternative answer that is open to a determinist.

II

I turn now to Mackie's objections. Since it is, alas, not possible for me to have what I will say in this section checked by him, I will not attempt to report exactly what he said in the course of our long discussion. Instead, I will present the objections to Landè's argument as I myself came to see them in the light of our discussion. Although I will not be making specific acknowledgements to him, it should be understood that what I say in this section is essentially indebted to Mackie.

Imagine that I myself am contemplating a Landé-blade set-up. There are various assumptions that I might make concerning the initial conditions, and it will be instructive to begin with an extremist one that is quite unrealistic. (1) I might assume that there are *no asymmetries at all* in the set-up: the apparatus is located within a perfect vacuum; there are no magnetic or other factors to exert even the minutest disturbing influence; each ball is perfectly spherical and homogeneous; and all balls roll down exactly the same path, beneath which the blade is positioned absolutely centrally. What prediction should I make, concerning what will happen when balls start being released, on *that* assumption? If there were nothing whatever to incline the first ball to one side or the other when it reaches the blade, then the only justifiable prediction is that it will *come to rest on the blade*; and the second ball, on this assumption, should come to rest on top of the first, and so on. We should get a vertical column of balls, with no l's or r's. (2) Suppose, next, that everything is as before except that the blade is now moved minutely to the left. On this assumption I should clearly predict 1000 r's. Let us now become more

realistic. (3) Assume that the balls are as nearly spherical and homogeneous as the manufacturer could make them, and that the blade is positioned as nearly central as we can get it; however, the apparatus is exposed to the air, and there is a slight draught coming from a window to its left. Apart from this we assume that any other disturbing factors are unbiassed between left and right. On this assumption I should clearly predict a preponderance of *r*'s over *l*'s.

It is clear from the foregoing that what, if anything, I can legitimately predict here depends crucially on what assumption I make concerning the conditions of the set-up during the falls of the balls. And it is also clear what assumption I need to make if I am legitimately to predict an approximately 50:50 split between *l*'s and *r*'s, namely: (4) the set-up is beset by various little asymmetries and disturbing influences, but these do not have any systematic bias towards either left or right.

We are now in a position to locate the error in the argument presented in Section I. The idea was that a determinist, upon hearing that 1000 balls are to be released one after another onto the blade, would proceed from a consideration of the visible symmetry of the set-up to the prediction of an approximately 50:50 split between *l*'s and *r*'s and that this would lead on to a specific assumption about *past* initial conditions, namely, a retrodiction of an approximately 50:50 split between ancestral *L*'s and *R*'s. We now see that neither the determinist nor anyone else is entitled to proceed to a statistical prediction here in the absence of a specific assumption about *present* initial conditions within our set up during our experiment. Determinists and indeterminists alike need to introduce something like assumption (4) before they can proceed to the desired statistical prediction. In the absence of such an assumption, the prediction concerning *l*'s and *r*'s does not go through, and nor does its attendant retrodiction concerning *L*'s and *R*'s.

But does not assumption (4) itself give rise, if we accept physical determinism, to the same retrodiction? Assume that our Landé-blade is going to generate a sequence of *l*'s and *r*'s that is random in the sense that there is no gambling system, or method of place selection in the sense of von Mises (1957, pp. 24f) that would enable a gambler to improve his chances of winning in the long run. Is not a physical determinist obliged to view such a sequence as the descendant of a corresponding sequence of ancestral world-states? Well, he is indeed obliged to view each individual event in the sequence as an outcome of a causal chain stretching back to an ancestral world-state in the remote past; but he is not, after all, obliged to admit that the sequence of ancestral states was preadjusted to generate a random sequence today. A confluence of rigidly deterministic causal chains that are largely independent of one another may yield a chaotic collective result; but this does not mean that a determinist has to postulate a chaotic ancestral state of which the present chaos is the descendant. Imagine a celestial billiard table on which a great number of balls are lying at rest; they are going to be set in motion, by angels hovering over

them, at some initial time t_0. Now the balls may have been laid out on the table in some precise and regular geometrical pattern, and the angels may strike them in carefully premeditated ways. The state of the table at t_0 may be as orderly as you like; but it is virtually certain that, after they have been colliding with one another for some time, their overall appearance will have become no less irregular than it would have been if the balls had originally been scattered haphazardly over the table and the angels had hit them at random. A would-be predictor of the state of the table at some future time t_2, who lacked a Laplacean Demon's ability to ascertain, at a given instant, the exact position and momentum of every ball, would have to be content with a statistical prediction. Suppose that he mentally divides the table into a left half and a right half, and that his prediction is that at t_2 there will be an approximately 50:50 split into *l*'s and *r*'s where *l* now denotes a ball in the left half of the table. Could he, if he were a determinist, proceed from this prediction to some retrodiction about the state of the table at t_0? Well, he would be obliged to say that its state at t_0, in conjunction with the laws of mechanics, causally predetermined its state at t_2. But he could not legitimately assert that those statistical features that the balls will collectively exhibit at t_2 are descendants of corresponding statistical features that they collectively exhibited at t_0. As we saw, it is entirely possible that at t_0 the balls had a thoroughly non-random appearance; and it is further possible that they were then collected together, say, in a triangular formation, in one small region near the left end of the table.

III

I turn now to that analogue of Landé's argument against physical determinism that I hold to be valid. You, let us suppose, are sitting at a cafe table with two young Americans, Al and Buster, whom you had not met before. You strike up a conversation. This is not like a Harold Pinter dialogue, with the characters engaging in intermittent monologues and taking little account of what others say. In your conversation, each response is *appropriate* to what has been said; there are no breakdowns in communication. To make it more manageable, let us concentrate upon one short exchange. You ask Al where he lives. He does not answer immediately, his mouth being full. Now Buster knows that Al lives in Cedar Rapids, Iowa; and he predicts, correctly as it turns out, that Al will say so. Implicit in Buster's prediction as to how Al will answer was a further prediction about the impending movements of Al's lips, jaw, tongue, larynx, etc. when he answers. Indeed, if Buster knew a little about phonetics, he might give this latter prediction a modest degree of precision; for instance, he might predict, again correctly as it turns out, that Al's lips would nearly close when he started to say 'Cedar Rapids' and that his jaw would drop when he came to the 'I' in 'Iowa'. Let *l* and *r* denote respectively

Al's lips nearly closing and his jaw dropping. These are physical movements; and, according to physical determinism, they will have been causally determined by immediately antecedent physical factors l' and r', which will in turn have been caused by l'' and r'', and so on back until ancestral states L and R, say, one billion years ago, are reached. Now Al's answer was *appropriate* to your question; and the movements of Al's lips, etc. including l and r, were *appropriate* for voicing this answer. We now put to the physical determinist a question analogous to the one that Landé put to him: why should L and R have been so nicely geared to Al's needs one billion years later? Whence this pre-established harmony?

Instead of this little question-and-answer exchange, I might have taken grander examples; for instance, the muscular movements involved in Michelangelo's brush-strokes when he was painting the Sistine Chapel or in Newton's pen-holding hand when he was writing his *Principia.* Of course, this argument is powerless against someone who combines physical with theological determinism and who says that there was, indeed, a divinely pre-established harmony. But it seems to me a powerful argument against physical determinism on its own.

It seems to me that the present argument supersedes a well-known argument against physical determinism that runs as follows: if physical determinism were true, then any 'reasons' that a determinist might have for believing in it are mere epiphenomenal by-products of non-rational physical processes; hence there can be no good argument for physical determinism. Popper (1982, pp. 81f) attributed essentially this argument to Haldane (1932), while Lucas (1970, p. 116n) attributed it to McTaggart (1934). (Both Haldane and McTaggart presented it as an argument against materialism). The trouble with it as it stands is that it is not an argument for the *falsity* of physical determinism, only for the unreasonableness of holding this doctrine. A doctrine that it would be unreasonable to hold may nevertheless happen to be true. This is where the above analogue of Landé's argument comes to the rescue. We need only to assume that people generally tell the truth when asked straightforward questions to which they know the answer. Now imagine a roomful of monkeys merrily tapping away on typewriters. We look over the monkeys' shoulders, and observe, as we expect, only gibberish—until, to our amazement, we come across the following fragment:

....9imjQ! "}@[O THIS SENTENCE IS BEING TYPED BY A MONKEY HITTING THE KEYS AT RANDOM [-0£"J?><[^....

By an incredible fluke, a true sentence has got churned out by a random, non-rational process. But now suppose that whenever we look over a monkey's shoulder we invariably find meaningful, and, for the most part, true sentences being typed with only the occasional typing error. The hypothesis that this was all a superincredible fluke, all these sentences having been churned out

randomly, could hardly be maintained. We would be driven to a conspiracy theory. Perhaps the monkeys have been trained by Skinner? Perhaps they are really human beings disguised as monkeys? To get our Landé-inspired argument for the falsity of physical determinism we have only to substitute for (*a*) these typewritten sentences and for (*b*) the random tapping of the monkeys, (*a*) the truthful answers that people generally give to straightforward questions and (*b*) the mindless physical processes, causally determined from the year dot, which, according to physical determinism, ultimately control their physical movements.

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Philosophy: a way of life for the mass-man

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There seem to be two currents in man's quest for truth—the one out-going and the other in-coming. Man lives in an environment which embraces conscious individual human beings like himself, biological organisms of various species, and what *man regards* as 'inanimate' physical things and objects. Although physically limited by his environment, man desires to live *freely* as much as he desires to live *securely*; and his adventures in the field of knowledge seem to be geared to fulfil these *two* essential purposes. There can thus be no urge for knowledge for the sake of knowledge. Our knowledge is to enrich our living, to make it smooth and easy, free from cares, tension and strife. Not that these aims and objects are realized all at once, but in spite of non-fulfilment these continue to be the much-desired 'goal' forever. To achieve this goal man has to seek adjustment with his environmental conditions; and since his environment is composed of other men having a homogeneous nature, similar disposition and like capabilities, even in his self-interest man is required to build up an atmosphere of mutual understanding to facilitate mutual co-operation towards realization of the common goal. Although he may 'learn' things on his own account, 'know' as much as he has the genius for, his 'wisdom' is determined by the measure of his success in discovering those invisible bonds which unite man with man and also man with his physical and biological surroundings and form the metaphysical basis of such principles of conduct as ensure man's security, freedom and peace. While *knowledge* consists in progressive exploration and discoveries, *power* consists in progressive exploitation and use, *wisdom* consists in progressive assessment, assimilation or discrimination, and finally, in the 'reformation' of attitude and disposition for better adjustment and greater harmony with the world-at-large. While the former are the moments of the *out-going* current, the flood-tide that breaks through new fields and areas not covered before, the latter is the *in-coming*, the return current, the ebb-tide, which silently works for proper settlement of the deposits left over by knowledge as a mode of new discovery and exploration. In the normal state of things, knowledge and wisdom, science and philosophy, should determine each other as do the tides. Disruption, even disaster, threatens human existence when this normal relationship is disturbed, and knowledge breaks itself loose from human purpose and use, and seeks fulfilment in its own ways. Philosophy deviates from its essential purpose, which is humane or *humanizing*, when its quest for truth misses its direction, and instead of throwing new light upon problems of human life and existence, degenerates into a search for new and newer methodology wherewith one can,

by means of a *special norm* (arbitrarily devised), rigidly determine the limits and conditions of the '*knowable*' and the '*sayable*'. This, no doubt, is also a form of wisdom but this is all theoretical, and since its relevance is not determined by any practical demand of life, it has no value for the common man grappling with problems of existence. This makes philosophy an affair of the academicians, a matter for verbal debates and hair-splitting, which has no impact upon the living issues of society, no value even for those philosophers themselves as citizens of the world they live in.

One may, we feel, legitimately ask the question: *what necessity is there to examine the propriety or impropriety of a metaphysical, and in that sense, of a philosophical view of things, by judging if it conforms to the modality of the language or propositions of science or not?* Has Kant succeeded in advancing the cause of metaphysics by his critical review: if we can have any synthetic *a priori* judgments in metaphysics or not? Descartes wanted to elevate philosophy to the status of scientific knowledge in the sense of a body of necessary '*truths of fact*'. His model of scientific knowledge was mathematics, and he felt tempted to introduce mathematical method in philosophy. Spinoza followed the method of geometrical demonstration, and Leibnitz, although deviating from his predecessors as regards his conclusions, operated upon the very some kind of *a priori* concepts to weave out a metaphysical system of his own which he believed to be logically necessary. There can be little doubt in that all that these rationalists, in their bid to make a science of philosophy, succeeded in doing is *framing certain alternative models* of purely conceptual systems, which only illustrate, as the Vedanta puts it, essential *unbriddledness* and flippancy of conceptual thinking if left to its own free exercise. This also substantiates Kant's observation that human reason, in its bid to spin out postulatory systems, gives rise to dialectical illusions. It is, however, doubtful what concrete gains were achieved towards fulfilment of human purpose and objectives by the negative criticisms of the rationalistic metaphysics, and later on, by destructive criticism of absolutistic metaphysics of Hegel. It may be that metaphysics is not a body of necessary truths of fact and does not fit into the model of such *a priori* disciplines as Mathematics or Logic; it may also be conceded that the absolutist's conception of Reality as a *logically compact and completed* system is another 'Idea of Reason' and a speculative dogma; but that does not take away the fact that we need some discipline akin to metaphysics for reorganization and reformation of our attitude towards life as also towards social relationships. Human aspiration for a better way of living, a mode of life which is free from tension and stress and which breathes an atmosphere of peace as much as self-fulfilment, needs an *objective* basis, a basis in Reality, and refuses to be brushed aside as an empty dream, all moonshine. And this is a kind of metaphysics, the root of which lies deeply buried in the innermost recesses of man's rational nature as the very fabric and substance of Practical Reason as Kant might have expressed; and this cannot be excavated and removed either by a critical investigation into the

legitimate conditions of theoretical reason or by a *laboured analysis* of objective language as Wittgenstein has advised.

We do not disparage what is historically known as the critical or the analytical movement in philosophy. Criticism, which shows the essential differences among the various strains of human experience, and linguistic analysis, which unravels the structural differences among the varied forms of linguistic expressions in term of which we seek to articulate and also to communicate what we think, feel and will, have their relevance and use in the field of *specialisation*. They also provide valuable aids towards clarification of our ideas. But such *methodologies* of philosophy seem to err in trying to usurp the place of philosophy or philosophical thinking *as such*. To put the matter otherwise, it would be erroneous to claim that philosophical wisdom consists in, and is limited to, *this* or *that* exercise of a certain *methodology of philosophy*. This is plainly missing the wood in the trees, the macrospic in the microscopic. All throughout the history of the so-called 'critical' and 'analytical' movements, movements which have run on different rails and lines, there has been an attempt to relentlessly pursue the ghost of metaphysics and to chase it away from all its possible haunts and habitats. For its inability to fit into the texture of synthetic judgments *a priori*, a model which was believed at that time to be the model of scientific knowledge, that is, of objective knowledge which was to be at the same time universally true and in that sense necessary, Kant withheld justification of metaphysics to be a body of knowledge properly so-called. This, however, amounted to standardizing a certain conceptual fabric as the model of the so-called scientific knowledge and denying the capacity of metaphysical knowledge to fit into it. But the conceptual model for scientific knowledge has itself undergone changes from age to age, and men of science in the post-Kantian era did not feel it obligatory to swear by the Kantian predilection. Even if they did so, the net result would have been that metaphysics could not be regarded as a science. This would be a repudiation of the rationalist claim that it was a kind of science in the sense of necessary truths of fact, but nothing more. Did Kant ever deny the *necessity* of metaphysics, *which*, according to him, was prompted by the very basical nature of human reason and understanding, for the specious reason that we cannot answer metaphysical questions fruitfully and decisively as they relate to issues which transcendent the bounds of 'possible experience' of Kant's meaning? He did not commit as much. The author of the *Tractatus* seems to have gone one step farther in as much as he denied the possibility of there being metaphysical questions, a stand which Kant did not take. But even in that context, all that Wittgenstein meant was that, since every significant or meaningful question could have an answer and since there could be no meaningful answers to the questions posed by metaphysics, there could be no meaningful questions either. So he counselled: 'Whereof one cannot speak, thereof one must be silent.' But while *Tractatus* does not dispute there being metaphysical issues alongside ethics and aesthetics—although it discourages metaphysical questions—

the *Investigations* takes the extreme step in not conceding any real 'problem' for philosophy at all. It faults itself on the side of errant extremism in the hasty generalization that all the so-called philosophical problems are pseudo-problems in being products of confused thinking, and in so far as it holds that these all arise from misuse of language. These, it is said, do not call for any 'solutions' since these can all be 'resolved' through logical analysis of language. Some early followers of this trend of thought would even prescribe psycho-therapeutical treatment for all those who do not fall in line with their mode of thinking and do not share their enlightenment. Some later followers of the school among our contemporaries, however, have become circumspect, and they seem to have discovered some structural components of a new metaphysics, named by them 'descriptive metaphysics' in their analytical survey of human language in general. We are not concerned with the merit or drawback of all these historical developments of academic philosophy addressed to the *elite* who are all theoreticians. The one observation, which seems relevant in their context, is that these academic philosophers seem all to be pursuing,—for *uprooting* or for *restructuring*—some model of conceptualistic metaphysics—a system of inter-related concepts, which orthodox believers used to accept as a picture of Reality, non-sensuous and transcendental, and which the moderns regarded as an 'autonomous and privileged edifice' undisputably real because it is rational. Let us now pause for a moment and examine afresh if metaphysics that we value is all this.

There seem to be some grounds for rethinking on this issue. Metaphysical philosophy, or let us say, *philosophy as metaphysics*, is an affair of the common man, the *real* man, the mass man, who lives in the *real* world and grapples with the problems of life and existence, which again are all *real*. It embodies counsels of wisdom for the type of adjustment and reformation of aims and attitude that the real man, the mass man, should strive for in order to realize the two basic goals of his life, already indicated in our opening paragraph, such as *security* and *freedom*. No one desires to invite troubles for one's self; no one again can barter away one's freedom and remain self-satisfied in a state of repression and subjugation. Wisdom, therefore, counsels a planning for *security* as much as for *freedom*. The type of planning which ensures both becomes the *means* to the realization of the supreme end of life, the *summum bonum*—'absolute' *self-ulfilment*. This wisdom is, of course, no knowledge, only because it is more than knowledge. Knowledge, as we have already insisted, is an affair of the out-going movement of the mind in quest of truth. Knowledge is directed upon the world of *facts*, and its purpose consists in making ever new discoveries. Knowledge is explorative. Science gives knowledge, as our ordinary sources of knowledge—such as, perception, inference, etc.—also give knowledge of 'facts'. The type of philosophy we call 'academic', in so far as it reviews and critically assesses the nature and temper of various forms of knowledge as also of the various methodologies of knowledge, is also not without value. The so-called 'descriptive metaphysics', 'revisionary metaphysics', 'metaphysics of experience' of Professor Paton's use, 'the illuminating nonsense' of Wittgenstein's conception—all have their roles as knowledge or as knowledge of knowledge, whatever may be their drawbacks or failures. In the larger scheme of human life, nothing is a sheer wastage. There being no absolute standard of knowledge and all knowledge being subject to revision and so provisional, even our follies and foibles (subject to future correction) have their place in the human quest of truth. But knowledge, even knowledge of knowledge, and academic philosophies developed on such lines, in as much as *all these* are plainly theoretical, are *not* to be confused with philosophical wisdom. Knowledge plays the role of 'sappers', and wisdom, like the main contingent of the army, feels its way through the several discoveries made by knowledge, and fights the real battle for existence. The real metaphysics is *not* to be sought in the peripheral display of ideas. Just as the real battle is fought in the calm and secluded atmosphere of the general's map room, so the real metaphysics is exhibited in the several plannings of philosophical wisdom for the twin objects of *security* and *freedom* as conducive to 'absolute' self-fulfilment of man—a knowing, feeling and willing individual, living in the community of other individuals like himself. Real philosophy, by which, unashamedly and without any reservation, we mean 'metaphysical philosophy', has its roots in the several forms of planning for a secure and free life of the common man, the 'mass man'.

Needless to say that we, by metaphysical philosophy, do not mean any stereotyped, eternally completed and absolutely fixed planning, although the aim and object of this planning, the 'schematic form', or framework of the planning, is essentially *fixed* and, therefore, subject to no alternation or revision. It will be helpful if we draw upon a Kantian principle for the purpose of an analogy. The ignorants have charged Kant with abstract formalism for his framing of the *principle* of moral action, oblivious of the fact that a *principle*, a guide to action, claiming to be a *universal rule* of conduct, can only be framed in the shape of a formal scheme, which remains inviolable in so far as it is not subject to the vagaries of concrete proposals of actions made by man according to prevailing circumstances for *actualization* of the ideal which the principle itself represents. Thus Kant said: 'Act as if the maxim of thy action were to become by thy will a universal law of nature'; or 'Act only on that maxim whereby thou canst at the same time will that it should become a universal law.' Rendered into simpler expression, this means : One is to act in a manner in which one may wish all other people also to act without detriment to any one's interest.' Kantian guidance has been, as we all know, to treat all humanity whether in one's own person, or in that of any other, in every case, as an end withal, never as a means only. Kant did not specify, as he was not required to do either, what concrete modes of actions could meet the requirements of the principle of moral actions framed by him. We do not find any ground for disagreement with Kant as far as this Kantian mode of formulating the metaphysical principle of morals is concerned. But we differ from

him when he says that 'nothing can possibly be conceived in this world, or even out of it, which can be called good without qualification, except a good will'. The reason is this. We do, in fact, believe in something to be good absolutely or without qualification in every moment of our practical decision, although what we decide upon as an *absolute* good at the stage of such decision may turn out subsequently either as a half good or as no good at all. We act upon a *firm* decision always, never half-heartedly, and what we look upon as good at that moment we do not take as good in a qualified way. Then again inasmuch as Kant regards nothing as absolutely good except the good will, we have our reasons to differ from him. For us, the good, the *summum bonum*, consists in absolute 'self-fulfilment', and the planning for *security* and *freedom* is the means thereto. Now to return to the metaphysical philosophy we were speaking about. It may be that human wisdom is an evergrowing thing, and to keep pace with the advance of wisdom our planning for *security* and *freedom* also undergoes changes. But the *objectives*, the aims and purpose of living do not alter. Human wisdom from time to time projects what can be called an 'enlightened view' of things. This consists in regarding how man stands in relation to other men and his bio-physical environment, what the *real* type of relationship can be that obtains in *rerum natura* among its several constituents; in short, what the nature of Reality *really* is grasped through the focus of human wisdom of the moment. This explains the genesis of metaphysical philosophy as the 'conceptual base' of our planning for life and existence at a given stage. Man not only lives on food but also upon ideas, such as, what kind of a person he is; how he stands in relation to other men and the world at large; how best he can realize what he conceives to be the good of life. Such ideas are not only incentive to actions but, in a great measure, they are also determining conditions of his actions. The sagacity or frivolity, adequacy or inadequacy, legitimacy or illegitimacy, sensefulness or senselessness of the conceptual base of our planning for life is not to be decided *theoretically* by means of a methodological investigation into the conditions and limits of the 'knowable' or 'sayable' but by its success or failure to serve life and its cherished ideals. It can be seen that our planning for life together with the conceptual base that supports it, is subject to change and revision. But this is not done at the dictates of the academic philosophers; this is done in response to the counsel of human wisdom accumulated in course of ages. The voice of human wisdom gives the philosophy which *works*, and is useful for life. Undoubtedly, this can be formulated in term of concepts. But this is *not* the conceptual metaphysics which the academic philosophers dispute and criticize. *That* conceptual metaphysics is undoubtedly an ingenious and free construction by rival schools of academic philosophers, who make free selection of a concept, or a group of concepts, and operate upon them in order to build a system of thought. But this can have only a *theoretic* or aesthetic use but no use for the life of the common man. The conceptual formulation of the theoretic base of our planning for living, as we have indicated in the

foregoing, is very much different from the metaphysics of concepts of this kind. This is the metaphysical philosophy of mass living, the *way* of living of the mass-man, and this is necessitated by ever-varying problems of life and is directed upon the 'solution' of such problems.

The life we live today is both individual and social. It can possibly be properly described if we say that it is individual in being social and it is social in being individual—there being no basis for a dichotomous division of life as it is actually lived and shared. Man has long outgrown the stage when he lived for himself alone. As he passed beyond the hunting stage, his life and its needs unfolded more and more, and so did the area of his co-operation, corporate living, and co-existence; and today, when progress in scientific invention has made everyman a neighbour to every other moving on the globe, the dimension of his individual and social life has immensely increased. The maxim 'love thy neighbours and hate thy enemies' has become very much outdated today, whether we realize it in that way or not. The views of social relationship it embodies is no longer the *truth*. That mankind is divided as natural friends and enemies is not also the living social reality, since inventions of science have today removed the spatial distance that once isolated man from man, have removed also the communication gap that was once the main ground of racial prejudice and suspicion. All men are now neighbours and none a natural enemy. Co-operation, and not competition, should now prevail as the order of the day. We can, of course, compete today with one another for bringing about what is socially good in the sense of being good for all mankind. But competition for achieving what is good for an individual only, or for members of one's own community, colour and political or religious creed only, is sure to end in disaster. In course of our progressive advance in knowledge that was explorative, we ourselves have brought about or discovered a new situation, a new social reality. It is for philosophical wisdom now to settle upon a correct view of the situation, and to formulate such plan for action and social behaviour as will make it possible to realize the aims and objects of the commonly shared life in all its dimensional variedness and also in its qualitative richness of content.

Not that this will be a new task, a new involvement for human wisdom in its historical stride. In fact, in all ages, philosophical wisdom has been concerned with the formulation of a 'norm' of conduct, an ethical code for mass-life based upon a metaphysics, that is, upon what seemed to be a *true view* of the existing state of affairs, otherwise called the *nature of reality*. This kind of occupation is intrinsical to philosophical wisdom. Philosophical wisdom cannot go without what it regards at each stage as *true* view of things—a metaphysics, which is to provide for the theoretical base of a new planning, of a new ethics of mass-life for the benefit of the mass-man. This metaphysics, it can be seen, is not the same as the *conceptualistic* metaphysics that the academicians often construct by the so-called logical operations on some selected concept or group of concepts. This, thus, remains unaffected and untouched

by the kind of criticisms that any rival school of academic philosophers may heap upon purely conceptualistic metaphysics. As for such conceptualistic metaphysics, a logical system of pure thought-constructions, it can be seen that its inadequacy, even its frivolity, is not exposed so much by the type of logical criticisms that Hume or Kant, the logical positivists, or the Wittgensteinians made in its regard, as by its failure to provide the requisite 'norm' for the guidance of mass-life towards attainment of its cherished goal, viz. *security* and *freedom*. In short, it is an aesthetic dream of academic philosophers and has no impact on mass-life. Indian tradition has defined a genuine and true metaphysics in term of its *value* and use for human life, and the human life in this context means the life of the mass-man. Thus, it is said, that alone is *vidyā*, that is, the *true view* of reality, and so, a genuine metaphysics, which can '*liberate*' can make a man absolutely secure and free—*sā vidyā yā vimucyate*.

This Indian insistence on '*liberation*' as the goal of life sought for is not to be misconstrued as an 'escape from life and its problems'. Nor should the concept be confused or identified with 'salvation', as this latter concept is ordinarily understood in the context of traditional religious belief. 'Liberation' means conscious attainment of a state of *absolute security*, fearlessness, and so, *freedom*, *here* and *now*. This is attained not by escaping from life and its varied problems but by solving the problems of life and existence while living in this life. Needless to say, the *absolute* freedom which this state of liberation ensures is not to be confused with 'unrestricted licence' either. One who is liberated in the meaning, intended in this context, does not work or plan for a situation of aggression and exploitation, malice and hatred, fear and tension. He follows the maxim of not doing unto others what he does not desire to be done unto himself (*ātmano pratikūlāni māpareṣām samācaret*). This seems to be somewhat a negative putting of Kant's 'Act only on that maxim whereby thou canst at the same time will that it should become a universal law', or what Kant otherwise phrased in his metaphysics of Morals: 'Act as if the maxim of thy action were to become by thy will a universal law of nature.' But the negative putting in the characteristic Indian way has one great advantage. It is not easy to determine what kind of act of the individual can be made into a universal law, a principles of conduct which everybody can follow without contradiction. The Kantian categorical imperative has the 'look' of a bare form without content because of this difficulty. But it is not at all difficult to find out what kind of actions an individual does not desire to be done unto himself. Instinct for self-preservation has rendered self-interest the individual's prime objective and motive. What is detrimental to 'self-interest' seems to be as immediately known as is one's self-interest'. There is thus an indirect sort of motive *to avoid*, or *to refrain from*, doing what is detrimental to one's self-interest. It is not, therefore, asking for anything unintelligible or unspecific if one calls upon an individual or a group of individuals to refrain from doing unto others what he or they would not like to be done unto himself or themselves. It is, again, not asking too much of an individual, not asking for anything which involves his self-sacrifice, if he can be made aware that by wronging others he invites a retaliatory reaction upon himself. Plainly, this is an advice for the safeguard of one's own self-interest. In one's self-interest, one should not do unto others what one does not desire to be done unto one's own self. Unfortunately, very few ever see the truth, the light of wisdom in this. Most men are guided by the weird notion of personal or group privilege, and are foolishly resolute in perpetrating upon others not only acts of neglect and deprivation but acts of aggression and exploitation also. By their bid for power and exclusive privilege, they go on creating enemies and social unrest all around, and, in this way, plan for anxiety, for tension and stress for themselves also. And this is not the way to absolute security and freedom that philosophical wisdom plans for. That security as well as freedom is *individible*. No man can remain truly secure and free so long as every man is not secure and free. This *was the truth* when men lived in smaller groups and did not know about the existence of other groups, this *is the truth* now when the world has shrunken into one living space for all men, and it does not cease *to be the truth* simply because the ignorant powerful, the philistines without foresight, do not regard it in that way.

The Kantian moral imperative seems to have another limitation. That moral act or will should not be guided by any prudential consideration, by anything outside of itself, seems to involve a tautology, such as, moral act or will is free because it is the moral act or will, and it would be a contradiction if such was not the case. There seems to be a flavour of self-deprivation also, not of self-fulfilment, in the Kantian formulation of moral duty. This then runs counter to our understanding of the nature of philosophical wisdom and its planning for the social good—for the good of mankind in general. Man has to become co-operative and not competitive, non-violent and not aggressive, should opt for peaceful co-existence and should not plan for war and mutual annihilation because such is the path of prudence and wisdom. And the path of prudence and wisdom runs in that way because that *is the way of the truth* about social reality. It is by participation in a common and sharable life that we live in the concrete fulness of our individual life. Our enjoyment does not become a whit less when many others like ourselves enjoy the self-same screen-play or stage-play, the self-same piece of good literature and poetry, the self-same sun-shine and open air. The quantum of enjoyment is rather enhanced if all others enjoy in the same way.

That man does not readily see the 'Truth' about his existence, that man is prone to see it in a distorted way, prone to distort it, is the standing problem, and it is for philosophical wisdom to show the way to its solution. Is this problem 'resolvable' by linguistic analysis? It could be, if the problems of human life and existence were all linguistic. But, that man finds his self-interest and self-fulfilment as consisting in living at the expense of his neighbours and fellow-men, in living at the expense of his surrounding; that his knowledge of

himself and his environment, instead of furthering the cause of healthy living through proper adjustment and balancing of his inner relations to the outer relations, continues to create new areas of maladjustment by upsetting the balance of relations; that his planning for prosperity and plenty, for a limited area impoverishes wider areas and causes famine, both in physical resources and mental capabilities there, are not linguistic issues. These issues are all non-linguistic, the 'problems' all real problems. Can philosophy have any relevance whatsoever if it fails to provide any solution to these problems, which can neither be washed away, nor can be solved by any alternative means, such as, political white-washing? Not that philosophy has succeeded in solving such problems *finally* or for ever. Philosophy after all is a thought-planning; and although its aim or object is essentially practical, it issues forth as a theory with the demand for translation of its vision in practice, *in concrete*. This latter for its execution depends on earnest and active co-operation of the mass-man, the human agent. Human nature is incorrigibly delinquent. There will be always some men, who refuse to learn from the history of human civilization, from the rise and downfall of dynasties and the once-ruling races. Where are the world conquerers, the Greeks, the Romans, the Medes, the Huns, the Mongols, the Tartars, the Nazis and the Fascists today? Has the world learnt from their lessons? Is not the world divided even today in rival camps of political ideologies, of economic and military powers? Has not the self-same world, the different parts of which were brought closer by scientific and technological inventions, been again rudely divided between the North and the South, as between the *first*, the *second*, and the *third world*, all politically and socially recognized, on the one hand, and a *fourth world*, consisting of the *unrecognized*, the uncared-for, the socially deprived and handicapped millions, on the other hand—millions who are listed in the general census in every land or country, but are not counted as eligible partners in our social and economic distribution systems? Have we learnt anything at all from our past history?

How many of us are again alive to the fact that in his insatiable thirst for power to dominate over rival groups of people, man today is not only inviting increasing strain upon his physical vitality and mental equilibrium; but also, in his progressive bid for an enhanced mode of parasitic living in physical ease and comfort, he is polluting the God-given air and atmosphere of his physical environment, poisoning the water resources which sustain his life, and is exhausting the mineral resources of the globe—his foothold—by ever-increasing demands on sources of energy without the ability to replenish the existing stock. Then, again, science has given man enormous powers, which he can use for constructive as also for destructive purposes. But it is not given to science, an explorative discipline, to temper man's disposition in the right way and to reform his character. In his ego-ism, narrow self-love, and particularly, in his insensate desire for domination over people outside his racial and cultural group, man has remained the brute he once had been. With the

advance of knowledge and civilization, only the outer form has changed, not the inner core. By posing nuclear threats of total extinction towards those whom he considers his rivals in the bid for supremacy and leadership in world-politics, man today, quite unsuspectingly, is carrying the burden of self-extinction upon himself in the way of *Bhasmāsura* of the Indian legend. The enormity of his predicament can be seen in the fact that if, for some reason or other, he cannot use or utilize the weapons of destruction of his invention upon his so-called enemies, he does not know where to dump them except in his immediate neighbourhood, endangering thereby his own safety and the safety and purity of the environment that nursed him and contributed to his vital demands.

What is the way out of this malady, this man-made dilemma? Instead of engaging in verbal debates on '*sense*' or '*senselessness*' of words and expressions of common use—as if that is all that matters in this world and life—philosophers today need looking back in the old Socratic way: that knowledge, that philosophical wisdom, is not worth its name which does not culminate in *virtue*, and does not ensure a well-balanced life of normalcy *for all*, for the *mass-man*. Restraint and circumspection will be the first words of advice of philosophical wisdom at this moment of crisis of human values. Man will have to look back into the causes of his *distemper*, and curb his propensity to harm others in the belief that his self-advancement is possible only at the expense of others. 'Restrain yourself from doing unto others what you donot desire to be done unto yourself' continues to be the word of practical wisdom at all stages and at all time. 'As you sow, so will you reap' has been another expression of the very same wisdom; and this, besides being an advice as to what one should *not do*, sounds a note of caution and forewarning also to the effect that one endangers one's own safety and security *in future* by wronging others at the *present moment*. Indian philosophical thought has extended the scope and limits of this caution and forewarning beyond the pale of the present life in so far as it believes in rebirth and after-life. Man is the architect of his own destiny, it says; he can make or mar himself according as he plans for a free life, or for bondage—*yad yad kāmyate tadeva abhisampadyate*. One who has craving for a pig's life will be reborn as a pig, and one who has preference for a Socratic life will be reborn as a Socrates. There have been religions of mankind which aimed at curbing the aggressive ego of man by holding out threats of dire punishment on the day of judgment by a power infinitely superior to him—his creator and moral Providence. Such threats of punishment for misdeeds and again promises of reward for acts of tolerance, forbearance and piety that religions of the masses have held out have only one simple purpose or aim. And this is inducing man to live in peace and harmony as equal partners of the pleasures of life and existence that his Creator has provided for him without his asking for the same. A Tagore, for instance, considers it to be the prime duty and obligation of man to plan his life in such a way that he may prove himself worthy of the gifts of God, such as,

air, light, water, the open sky, the human body, vitality of living, and the mind to understand and appreciate these all. Tagore feels overwhelmed by his feelings of gratitude for all that he has received without his asking, and feels also grateful for nonfulfilment of the animal and selfish desires agitating his mind at times, by the very same Divine dispensation. But all are not like Tagore and all of us do not believe in God, that is, in a supreme power behind the world-show. There was also voice of wisdom from non-believers in the history of human civilization. One has simply to look back to the sagacious reflections of Lao-Tse, Gautam Buddha, Confucius and similar others. The Buddha, for instance, insisted on demonstrating non-substantiality and ephemeral nature of what people-at-large feel towards as their 'selves' or souls. Man is essentially a psycho-physical complex, according to Buddhism. He is an aggregate of what Buddhism calls the five '*skandhas*'. This is an aggregate without an integral unity or underlying substance. The 'self-sense', the sense of being a unitary, indivisible unity, an imperishable substance that survives after death, the sense of an abiding self, is a projection of blind animal craving, culminating in a wishful thought—construction, *buddhinirmāṇa*. The felt-continuity and one-ness of the Self is explained by Buddhism on the analogy of the optical illusion of a wheel of fire which is generated by rapid movement of a fire-brand in circle. Not that such a kind of analysis of the concept of personal identity is peculiar to Eastern thinking. In David Hume and William James we come across almost the same kind of philosophical reflection. We are not at all interested in the question of theoretical adequacy or inadequacy of these philosophical views. What is more important for us is the philosophical *purpose* which guided the Buddha to a philosophical enlightenment of this kind. And that philosophical purpose consisted in the discovery of a clue, of the light of wisdom, which could relieve man of the stress and tension of his personal life, and also cure him of malice and ill-will towards others. It is the belief in a false 'Self' in the form of the human ego, as also the false belief in its substantive and abiding nature which, according to the Buddha, has been the root evil of human existence.

Man can become his own worst enemy. This he becomes when he identifies himself with his 'ego', originally, the retroactive 'I-sense' or 'I-feeling' that characterizes any reflective taking of experience, and nurses it up—a ghostly appearance that shadows every conscious exercise of an individual, into a Frankenstein monster. Every act of conscious behaviour involves a sense of 'owning', put opposite wise, a sense of 'belonging' to a *particular* individual and not any other. This, then, is an inalienable feature of all conscious experiences. Human consciousness flows outwards through the gateways of the outer senses and dwells upon presentations of different kinds as external to itself, the sense of 'externalness' being all due to the operational involvement of the *outer senses*, which take its contents, necessarily, as *outer* facts. This consciousness, again, falls back upon itself in moments of retrospection and reflection, when it is drawn in upon an *inner-core*, the innermost

sense, which is the organ of consolidation and conservation of experiences as *inner facts*. This innermost sense, which is also the *inner core*, is the Ego. In so far as this core functions as the meeting point of diverse experiences *as* internalized, that is, as retrospective experiences, it assumes the form of a growing and developing unity. Consciousness feels towards this inner unity of retrospective experiences as the 'I', in contradistinction from *outer* facts, which are felt as 'that', 'this' and so on. Both the inner and the outer configurations are felt as unities in a relation of interdetermination of some kind. But it is preposterous to take these unities, inner or outer, as simple, and so as indivisible unities. The Kantian 'transcendental unity of apperception', we presume, is a postulatory concept, a transcendental presupposition of Kant's doctrine of categories as intellectual *functions*. Anyway, there is nothing transcendental about this inner unity in the Ego we speak of. The Ego is not also any pure unity. When we reflect on the 'I', we find it as consisting of a multitude of inward experiences. Whatever may be the nature of its inner composition, the 'I-sense' or the 'I-feeling', once it is formed, has the tendency to develop into the central point of reference in all our assessment and valuation of things. It being an inner fact that dwells upon the mind constantly and affects us more closely, we nurse it up as a privileged entity and identify ourselves with this our Ego. This false identity of the self with the Ego limits the true Self, which is one and all-comprehensive, into pockets of separate identities, more or less solipsistic, and we grow to be the mutually exclusive individuals. The Ego is not only the basic factor and constituent of 'individuation', but it is also the factor, which leads to greater and greater alienation and isolation, the more it is allowed to grow and develop. If an individual feels isolated from the mass of people, the reason can be found in an 'over-growth' of egoism in him. If philosophy today has lost its relevance for mass life, it is because philosophers have grown more egoistic and individualistic. That is one reason why philosophy is unconcerned with the problems of mass life and the norms which it should follow for peaceful co-existence. Instead, philosophers have isolated themselves from the main stream of mass life, formed themselves into a new species of men much superior to the common herd as it were, and they talk in a language of their own among themselves, which the mass-man does not understand, and the content of which has no relevance for mass-living. One expression of errant and aggressive egoism can be noticed in the political and economic behaviour of the scientifically more advanced nations, who have little thought for the unadvanced developing nations of the third world constituting majority of population on the globe. There is another expression of this egoism in the present-day philosophy which finds no genuine problems for philosophy, and regards all its problems as plainly linguistic. As if philosophers have no task other than chasing out the superstition of a metaphysics conceptualistic or otherwise, from all its moorings. The problems of human life, the hindrances and obstacles to peaceful and harmonious living can be seen to have increased

hundred times with the advance of industrial and technological civilization. What can be that discipline which is to face these problems squarely and with understanding, and attempt to solve these if it is not philosophy and philosophic wisdom? Maybe these problems cannot be solved finally and permanently. Millennium has not descended upon the earth in spite of the advent of so many Messiahs and prophets, teaching us about universal brotherhood of man. The ancient wisdom of philosophers of the East and the West also has not succeeded in curing the distemper of the human ego, which lies at the root of all man-created problems. But that is no reason why philosophy should leave off its proper charge and engage itself in discussions, all frivolous and without any relevance for mass life and its problems. By concentrating on what is personal and private, we invite our own doom by opening the ground for additional stress and tension. What is true of an individual person is also true of any group, any nation, which plans to live in isolation in its egoistic haughtiness and in contemptuous disregard of the sufferings and privations of other groups of people, other national communities. The safety and freedom of any man, of any group of persons, consists in going out of narrow self-imposed limitations, created and conjured up by aggressive egoism, and in participating in the larger life—the life of the *mass-man*. And philosophy is to show the way of this participation.

Constitutional law and the nature of basic legal propositions*

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Constitutions set limits to legal and political systems, specifying inherently what counts as the law, and what limits are to be set to the process of change which permits additions and deletions to the system. In this paper, we shall argue that the form of such a structure, if it is to result in what would be thought of intelligibly as a legal system (as opposed, say, to a collection of arbitrary fiats or a system of behaviour which simply reflects a certain pattern of applied force), must have crucial properties in common with Kant's idea of a Kingdom of Ends, and that there is an intimate and interesting relation of form and content in any such system.

To begin with, a legal system must be a system. To say this is at least to say that every basic unit must have some connection with every other such unit. A unit may be basic in one of two senses: it is basic if it cannot be deleted without changing the properties which apply to the *system* as a whole, and it is basic if it uniquely determines at least one other aspect of some other unit. (Of course, basic propositions will be chosen only from the set of those propositions which are irreducible in the sense that they cannot be replaced by any simpler proposition or propositions without loss of meaning or change of truth value.)

Basic units are of at least four different kinds: (*i*) those which define and shape the aims of the systems; (*ii*) those which delimit the procedures by which the aims are to be obtained; (*iii*) those which specify the ways in which the system may be changed; and (*iv*) those which define membership in the class of legal propositions. The surface structure of a legal system need not, of course, be organized so as to reveal at once how these distinctions work. A law, which defines larceny as an act through which one intentionally and permanently without legal authority appropriates someone else's property to one's own use, establishes the maintenance of property rights as an aim of the system, builds an implied procedure (obtaining legal authority) into the system, and creates a situation in which the law will inevitably change as specific items of property come to be identified. But this only serves to make clear the fact that the elements do have to form a system.

Hence basic units must be consistent with one another. One might say this for any system, but it is specifically characteristic of *legal* systems that the basic units figure as premises in various arguments and the units must

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not, therefore, contain both *P* and not-*P* unless we want to have a system in which *q* is true for any *Q*. Less trivially, legal propositions are characteristically applied in the settlement of disputes so that every sub-set of the basic units must consist only of units which can be *applied* together.

Evidently, this involves *more* than consistency. It involves the notion that application must be possible in such a way that the joint use of members of the sub-sets does not frustrate the purpose or aim of *any* of the component units. If this condition were to be violated in the case of every member, the system would be completely empty; but if it is violated in the case of any member, that member is deleteable under *some* circumstances then and it is evidently not what it appears to be. The *real* member of the system is some related proposition specified in part by the condition for the deletion of the apparent proposition. The system, in fact, consists of these *modified* propositions. This, then, involves us in the notion of systematic aim which, as we shall see as we go along, is a crucial factor in understanding what the logic of legal propositions could or should be like.

This suggests that there must be a rule governing what *can* belong to the system. We do not mean, needless to say, that the totality of the system can be defined, but there must be some limits, and these limits will be given by some form of systematic aim. Clearly not every systematic aim could be the aim of a legal system. Later, we will argue that the aim of a legal system must be to establish something like Kant's Kingdom of Ends if the system is not to dissolve into a collection of arbitrary fiats or the exercise of arbitrary force. Even such a claim is very likely a claim about the *necessary conditions* for a legal system. Whether one can state sufficient conditions for a system which is by its nature open and ongoing and, therefore, open to developments anyone of which may yield, a conflict of principles is, of course, a different question. Probably, a legal system, like any other entity which exists *sub specie-temporis*, lives at peril from a vast array of forces and conditions, not all of which can be stated in advance. But it is obvious here that only certain propositions *could* constitute parts of such a system, and the system *must* contain at least some of them. Despite the addition and deletion of propositions from the legal system, there will be some residue of propositions necessary to it.

This notion of actual or potential addition and deletion seems, however, itself crucial to the idea of a legal system. Characteristically, legal systems are thought of as governing some set of affairs. More realistically, legal systems provide shape for human affairs (as in the law of marriage or the creation of corporations), and even such sets of rules as the criminal law may be said to shape rather than govern affairs. By prohibiting the knocking of people on the head or the robbing of banks, they set the stage for one's evening stroll or for a career in currency exchange. But the shaping of affairs is a process and, therefore, may bring about change and surprise; so that the rules we are seeking, in general, will provide accounts of what kinds of things *must* belong to the system and what kinds of things *may* belong to the system.

Finally, if all these requirements are to be met, there must also be rules which tell me something more about how the basic elements are to be ordered. It is not enough to know that, in Canada, the Indian Act and the Bill of Rights do not contain prohibited items (contradictions, for instance). Nor is it enough to know as well that they do contain some ingredients necessary to all members of the system (if the overall system emphasizes justice and fairness, for instance, the laws must be expressed so as to contain certain universal quantifiers). We must also know how these laws are to be ordered. We must know the order of precedence at least within certain large classes of legal propositions. (That there may be a range of options between which legislative or judicial decisions may be made quite freely seems natural enough. Yet decisions do have to be possible.)

Characteristically, philosophers have responded to these needs by supposing that they might be met by some authority (whose commands could determine the limits of validity) or by a rule or rules of recognition which simply gave the desired limits; or by a basic rule or norm which might constrain the system while it was not, itself, derivable from any more basic rules. There are well-known general types of responses to this need. But it seems that these proposals generally fail to specify what makes legal systems legal systems and not something else.

The first kind of response is found in the philosophy of John Austin. In it legal systems are characterized in terms of criteria for individuation, identity, and class membership which derive their ultimate legitimacy from the decree of the sovereign authority which expresses its will, signifies its desires and backs *both* by a threat sufficiently effective to oblige obedience.[1]

Hart has pointed out that Austin's analysis confuses having an obligation in the sense of having a duty with being obliged in the sense of being forced.[2] More significantly, it confuses the obligation to obey the law with the obligation to accept the rules which legitimize the law-making agency. Austin realizes that there must be rules which determine who is and who is not a member of the sovereign (decision-making) body, but he does not give an account of why we should accept the rules which say that the law-making agency is to be accepted or obeyed.

Such rules must be logically prior to the law-making agency itself. They cannot, therefore, be commands of the sovereign. In insisting simply that, in the absence of criteria for such rules, the sovereign's commands comprise the only law and that law is morally binding, Austin produces a dogmatic theory which, in all its essential aspects, is not distinguishable from a naked justification of force.[3] In this sense, Austin's system is not a legal system, but, as Norberto Bobbio says, an ideology.[4]

The second response—a hierarchial system of rules—is found in Hans Kelsen's work. According to Kelsen, a legal system is composed of a hierarchy of laws of 'norms'.[5] The validity of one 'norm' is determined by reference to another 'norm', one higher in the system. At the base of the system

is the '*Grundnorm*', the basic norm which validates and legitimize *all* other norms and law-making agencies.

Kelsen declares that 'all law is positive law'. By this he means that all laws are created and annulled by acts of will,—though he recognizes that the 'basic norm' can scarcely be a positive *law* in the same sense. (It is unique.) Despite his analysis of the logic of the law, he leaves law, in the end, indistinguishable from other systems which are dependent on someone's will—systems of despotism and dictatorship which we ordinarily think of as 'extra-legal'. This becomes clear when we consider the related third proposal for defining a legal system.

H.L.A. Hart considers the formal conditions for a normative system with greater clarity. He presents a theory in terms of primary rules which oblige people to obey, and secondary rules which confer power and legitimize the law-making agency. The secondary rules which are rules of recognition, change and adjudication are, according to Hart, just matters of fact[6]

One difficulty is that there are organizations which are not legal systems,—as Fuller[7] and Sartorius[8] have pointed out, and which function by means of unions of primary and secondary rules (trade unions, universities and associations which govern games, for example). Hart's conditions, like Kelsen's do not separate legal systems from other normative systems.

More importantly, by making the basic rules of recognition simply 'matters of fact' Hart does not permit us to distinguish between the reasons why people should obey the law and the reasons why they do, *in fact*, obey it. Is he not saying: 'the primary rules are valid law because the officials declare them to be so?'

Hart is not unaware of this and he does suggest that the officials who are authorized to make such rules must give them a content which does not stray too far from the 'core sense' of the natural law thesis. But this, as we shall see, is a somewhat puzzling relationship. There is no necessity about any particular legal rule, in a sense, but there is, he thinks, a necessary limit to the range of rules.

Just what establishes this limit? The oddity is, of course, that, if, in the end, the ultimate rule of recognition is simply a matter of fact, we shall be hard put to it to explain just why the officials concerned are obliged to accept *any* restriction on the content of their rules. And if they are *not* so obliged, the distinction between legal systems and systems of force and fiat becomes, at the *ultimate* level, impossible to sustain—even though, on Hart's account, legal practice at all levels other than the ultimate one will be different from despotic practice.

Basic legal propositions then (those in the constitutional law which set limits to the legal and political system) cannot be just what Austin and Kelsen suppose them to be. Yet Hart's own account becomes rather mysterious. They cannot simply end in arbitrary fiat, even if that fiat is only introduced at a very abstract and ultimate level.

But let us look further at Hart's account. His suggestion is that the 'matters of fact' which give the basic rules of recognition are ultimately related to a 'core' natural law position, one which restricts the law by reference, for instance, to the facts of human nature. This leads toward the classical alternative to positive law theories. But will that work better than the positive law theory? Even Hart admits that at some very abstract level the limits of law are given by the limits of nature. But to make that admission is to say that in some sense nature *forces* itself on the law. Yet surely, if the law is made by the 'force' of nature, we will still not be able to explain the *obligation* to obey it.

One may think that any such criticism must lead at once to hopeless difficulties. For, if the law is not 'forced' by a fiat of a 'force of nature', it must somehow remain open. And how is such an 'open' law to be defined at all? Yet the idea, approached from another angle, seems reasonable enough, for a condition of what we ordinarily take to be a legal system is that it can adapt to change and can *always* accommodate the heretofore unforeseen. A patent law may, by guaranteeing that inventions are available to those willing to pay the royalties, lead to an expansion of technology which, in turn, demands new kinds of laws regulating damage to the environment or length of exposure to hazardous work. Such openness implies a system in which an infinity of mutually consistent laws can be generated. It must, that is, be possible for legal, educational, religious, recreational and other institutions to develop demands whose limits are not specifiable by any *a priori* norm. Without that possibility, any system must end in a system of force or fiat, in something not a legal system.

But is there not worse to come? This discussion also suggests that propositions expressing constitutional foundations will be logically unlike analytic propositions or ordinary synthetic *a posteriori* propositions. For whether the analytic propositions are arbitrarily chosen or consist of self-evident truths in some profound sense, they will be like the 'basic norms' we have just discussed. A system founded on them would, if it did not decline into fiat, still fail to be a 'legal system' by reason of lacking the give-and-take which is characteristic of legal systems that must control *developing* situations.

Equally, the foundational propositions we need cannot be synthetic *a posteriori*. Such propositions assert matters of fact. But to found a legal system on statements of matters of fact would be to claim that we are forced to accept certain *legal* propositions because of the way that the world is. (We shall see that many, if not most, 'natural law' theorists have not proceeded so crudely, but they are often understood in this way.) At first sight, this may seem harmless enough.

Yet to found one's legal system on claims about fact is to associate it with an appeal to a kind of force, even though that appeal is only to the force of nature. It leads to the claim that one is forced to accept such and such a rule because that is just how the universe *is*. We may thereby acquire a reason for

doing something but it is not, surely, a legal reason. A gangster also gives me a reason for behaving in a certain way when he says, 'Hands up or I'll shoot you', or 'My enforcers will attend to you if you go to the police', or 'Do this because, otherwise, I will shoot you'. The reasons given by the kind of natural law theorist, who appeals to the facts and forces of nature, are different from those of the gangster; but they have more in common than the fact that they offer reasons outside the legal order. Each claims that we are constrained by some fact or force. 'If you pervert human nature', says the theorist who seeks in nature a backing for his rules, 'you will come to grief. You will at least be dehumanized'. For he thinks of 'having a human nature'—more or less fixed—as being the condition of occupying the human place in nature.

Human beings in general (leaving aside a good many philosophers) have often enough reacted strongly to the instance that they must behave in a certain way because their nature, or nature in general, limits them or intends them to behave in a certain way. The response is: 'Very well, then let us change ourselves and, if we do not know how to do it today, we shall surely find out tomorrow'.

Of course, it would be quite different if, between characteristics we now have—like the ability to reason —and some crucial element in the nature of law and morals, there should turn out to be a close conceptual connection. But then the reason would lie in that connection and not in our natures. A rule, which says 'behave in such and such a way because it is natural to do so', does not yield a *legal* reason for performing any act, though it may yield other reasons. Nor would it matter if one substituted God for Austin's sovereign and made him the master of nature as well. Force and fiat, even if divine, are still force and fiat. Many, if not most natural theorists, have understood this well even if they have been misread. Thomas Aquinas, for instance, is clear about the distinction between law and divine fiat and, in *Summa Theologica*, recommends law on the grounds of reasonableness and remarks that 'God instructs us by means of his law'[9]

But one must be careful to guard these distinctions. If we accept 'natural law' simply as the law ordained by the facts of nature, we are involved in a species of Derrida's 'metaphysics as violence'[10]. Legal reasons must not depend on 'metaphysics as violence'.

And to guard the distinction, we pay attention to the logical structure of legal propositions. If, however, we have rejected both analytic a *priori* propositions and synthetic *a posteriori* propositions, we seem headed, by Kant's reasoning any way, to synthetic *a priori* propositions—a notion which many philosophers would reject out of hand. What we shall argue is that the propositions, which we need, derive from the inner working of the concept of law and from its relations to the concept of morality. Such notions are *a priori* in that they do not derive (directly at any rate) from experience. But they are synthetic in that they can be denied without contradiction. We shall argue that they cannot well be denied without creating debilitating conceptual conflicts within the concepts of law and morality. But someone, of course, might want to disable law and morality, and such a possibility can be discussed in ways that theses which depend inherently on formal contradiction cannot.

To see what is involved we must look at what has been going on in the present argument. The kind of critique of 'natural law', which we have just been offering, is a critique of what might be called *external* natural law, that is, natural law, conceived as law founded on something other than law itself, or something wholly beyond the legal system.

The argument we have been making is really that claims, which are founded externally in this way—claims about something *other* than the law itself—constitute an appeal to an analogue of force. But, of course, there are theories—like those of Lon Fuller and the one which we shall propose, derived, in large part, from some elements in Kant—which appeal to the inner *nature* of law. Whether these should be called 'natural law' theories is, to be sure, a matter of taste in words; for the claim made for such theories is that they are 'natural', to the law. But they are very different from the external theories.

One may, however, wonder if there is ground between the positivist theories and *all* the different kinds of natural law theories, and if this might not free us from the tangles of curious kinds of propositions. An answer to this question will add some further clarity to our problem. Some people have thought that Ronald Dworkin occupied just such a ground. The essence of Dworkin's theory is that law is ultimately controlled in its most general shape by a set of principles which one may find entrenched in the jurisdictional community.

Such principles are not arbitrary in the sense that positivists thought 'laws' were; but they are not principles of nature, either. Nor do they seem to be synthetic *a prioris*. It seems to be just a matter of fact that these principles are entrenched in the community, though it is, to be sure, a curious kind of matter of fact.[11]

Does Dworkin's position amount to a critique of legal positivism? If positivism consists of the claim that law consists only of rules, Dworkin would no doubt be right in pointing out that the elements of law are far more complex than legal positivism claims, but, as John Finch has rightly pointed out, it is doubtful if any positivist, and especially Hart, ever held such a thesis.[12]

The problem for a positivist is not about the elements of law (positivists could perhaps gladly grant Dworkin that law consists of more than rules), but about validity. The question of validity arises whatever the components of law are imagined to be. One what grounds can legal principles, policies and rules—the elements which Dworkin entertains—be justified? Dworkin is aware of this and does not think that legal principles are self-justifying or that the justification is found elsewhere in the legal system. Justice and legality seem ultimately distinct.[13] In the final analysis, the answer *within* the legal system given by Dworkin is not different from the one given by the positivists. Hart makes the rules of recognition a matter of fact entrenched in the prac-

tices of the community, Dworkin makes principles and policies matters of fact entrenched in the practices of the community. And if justification finally lies outside the legal system, then 'legality' is still a matter of brute fact. The basic inquiry concerning the grounds on which these principles and policies can be justified is, as in Hart's theory about rules of recognition, suddenly and arbitrarily terminated. The theory only asserts that the people of the community will bring certain states of affairs into existence; it does not tell us anything about why the community wills in the way it does. In the absence of this basic explanation, Dworkin's theory and Hart's as well fail to enlighten us about the behaviour of the community and hence about law.

The natural analogue to Dworkin's claim that law consists of principles, used by the people of the jurisdictional community, seems to be with claims about ordinary language, as that expression has been used by various followers of Wittgenstein who set out his own views rather darkly in the *Investigations*. Does law then become a kind of 'language game' as some Wittgensteinians have thought religion does? In so far as the 'game' of law is characterized and distinguished by its own peculiar rules, this analogy is worth pursuing. But while it may be argued that there is a certain inevitability to some components of the ordinary language (since it determines in various ways how meanings are assigned, and to question *some* of its rules may be to pass specifically into the realm of the meaningless), it is hard to see what inevitability attaches to the rules of which Dworkin speaks. It is difficult to imagine how one would argue for the necessity or superiority of this particular 'game' as against, say, the 'game' of following the dictator or participating in a social 'game' in which the rule is that 'might is right'.

In any case, the use of this analogy may face the same limitations one usually finds when one presses the Wittgensteinian notions of 'language game' and 'form of life'. Such notions are helpful in marking out empirically and distinguishing spheres of discourse; but of no help in justifying the practices found in these spheres or in justifying the criteria used to set limits to spheres of discourse or in ranking them.

This forces our attention back to the logic of propositions. It continues to seem true that no ordinary synthetic proposition stating a matter of fact will do to found a legal system. It also seems clear that no simple analytic propositions will do either. Somehow, the legal system must neither be founded on some wholly external constraint nor be empty. Thus such propositions must not be of the kind which are open to Quine's analysis of the analytic-synthetic distinction.[14] It must not be the case that they could be arbitrarily either analytic or synthetic and that they could slide back and forth between the two types.

It is characteristic of the kinds of propositions which Quine is thinking of that they contain key terms open to arbitrary definition or redefinition. For example, 'all men are mortal' can be taken to be either *a priori* or *a posteriori*. For we could decide that a man or a woman who was immortal would

not count as a 'human' in the generic sense. We might count such a person as an angel. But we need not do so. We might decide that the proposition was only empirical and that we were simply wrong in thinking that 'all men are mortal'. What is going on here, of course, is that mortality is neither so trivial a feature of human kind that it would make no sense to deny humanity to some creature on the ground of its immortality, nor so central a feature that it would make no sense to ascribe humanity to an immortal creature. Quine believes that it is a general truth that one can take a stand for or against a proposition claimed to be *a priori* and that one makes one's decision on pragmatic grounds. Perhaps, if the thing yields bacon, it is a pig, and if it pays taxes and may one day occupy a human hospital bed, it is a man.

But what we are arguing, here, is that there are propositions at the heart of law and morality such that, if they are not believed and acted upon, the conceptual structure will come tumbling down, not in the sense of producing bad results for the infidels who disbelieve them but simply in the sense that the concepts themselves no longer function well. There are grounds in the logic of the concepts which ought to lead us to accept the propositions. Such propositions cannot be arbitrarily shuffled from one deck to another.

But there is nothing inherently wrong in the idea of a synthetic a *priori*, if what one means by a synthetic *a priori* proposition is a proposition expressing a conceptual truth of such a kind that it will not be reasonable to reject it. Ultimately such propositions would have to be shown *not* to be arbitrary in some strong sense, while at the same time they should not be seen as frozen logical truths (incapable of adaptation) or as simple compulsions of natural forces.

In search of such propositions, let us turn to a likely place: Kant's idea of the propositions, which describe the kingdom of Ends, as they might be applied to a legal system.[15]

A Kingdom of Ends (let us imagine) is a system in which the law is limited by:

(*a*) The rule that each member is an end in himself; and
(*b*) The rule that every member of the community *can* be used by the community but can never be used solely as a means.

Furthermore, a Kingdom of Ends is a system in which what the law must contain is:

(*i*) A place for every *bona fide* individual;
(*ii*) A set of rules providing for the continuing equality of all individuals;
(*iii*) The conditions for the freedom (and so the moral responsibility) of each individual.

The idea of such a system is entirely the idea of a set of ideals. It does not depend upon any factual description except the assertion that there are ratio-

nal agents capable of being conceived as ends in themselves. This (assuming that the notion is not itself self-contradictory) is true in any possible world in which, in fact, reasoning can be said to be going on, and in which the reasons being presented can be associated with agents (i.e. any world in which there is a discussion and there is some procedure, according to which it may be said to make a difference which discussant utters the propositions under consideration). Since we are in the midst of the discussion, we can suppose that reasoning is going on. Such a system does not depend upon factual constraints but it is also not a fiat.

Yet is it not just an arbitrary moral assumption? Why should the concept of a Kingdom of Ends be something which we ought to accept?

But even to pose this question is to suppose a world in which, in fact, acceptance and rejection are possible. One who poses such a question is also suggesting that propositions which are reasonable and relevant should always be considered. To urge *that* is equally to propose that there should be some way of coming to a decision. There should be criteria and propositions which meet them and should be accepted, while the others should be rejected. This is to demand optimal conditions for acceptance and rejection.

What the idea of a Kingdom of End provides is the social conditions for optimizing the possibilities for acceptance and rejection themselves. That is it supposes, exactly a system in which choices are made by free decision and not by force and fiat. For the denial of the existence of ends in themselves and the denial of their equality is precisely the assertion that some propositions (namely, those which distinguish arbitrarily between some rational agents and others) should be accepted by force or by fiat.

At this point, there is a puzzle. It is clear that one must introduce certain restraints in the event that the citizen do not obey the rules for a Kingdom of Ends or, as Kant supposed, the rules sanctioned by the Categorical Imperative in general. Kant, indeed, thought that this was the main business of law, for like many other theorists he associated law with constraint.[16]

It is important to see how this came about and just how it creates tensions in Kant's philosophy of law. Kant's problem goes back to 1775 or shortly after and his *Lectures on Ethics* in which he distinguishes between subjective (moral) necessitation and external, objective (legal) necessitation.[17] Basically, the justification is simply that some people do not obey the moral law and so interfere unacceptably in the moral lives of others; but this does not explain how some people get the right to impose their wills on others. In a morality, founded on the notion of the autonomous moral will, this is clearly a problem. One may readily specify tensions which follow through his system thereafter.

The conflicts are at least these:

(*i*) The need to leave the individual autonomous (in order that he might be moral) conflicts with the social need for obedience to rules.

(*ii*) The need to determine by reason what one should do conflicts with the claims of the social order to determine one's action, and

(*iii*) The need to pass individual judgement on individual acts conflicts with the notion that morality ultimately implies a general moral order (the Kingdom of Ends).

The separation of law and morality comes with the idea of the autonomy of the will. The unity of law with morality is demanded by the Kingdom of Ends.

Kant generally rejects all the easy ways out of the difficulty and hardly seeks to disguise the tensions. In an essay on thinking in 1786, he argues powerfully for autonomy and freedom of thought as necessary for the discovery of truth. After all, restrictions on thought and its dissemination run counter to the whole concept of honest thinking. Yet he finally admits the claims of the social order and throws us back on the mercy of rulers.[18]

In the same year, in his essay on Hufeland, Kant rejects the view that coercion can be justified on the basis of a general duty towards perfection which we might have in the state of nature, for, of course, that claim would not explain how some people came to have authority over others.[19] In 1795, he used the same argument in the 'contra Hobbes' section of 'Theory and Practice'. The right to control the behaviour of others can arise only *after* we have a civil society.[20]

In 1793, he put forward the conditions we mentioned earlier on which a civil society might be based. Essentially, they rest on the moral duty to provide freedom, equality and independence. Thus, the law is entitled to compel my behaviour, if and only if in doing so it enhances the extent to which the community possesses these virtues.[21]

In *Perpetual Peace*, two years later, he repeats some of his earlier discussion and adds two rules derivable from the categorical Imperative: 'All actions relating to the right of other men are unjust if their maxim is not consistent with publicity' and 'all maxims which stand in need of publicity in order not to fail in their end, agree with politics and right combined'.[22] In 1797, he offered a good deal of elaboration, but no fundamental change of heart in the *Metaphysics der Sitten.*

The problems which he generates have, of course, no obvious solution in the terms in which he poses them. Indeed, they reiterate the conundrums of the 'unsocial sociability of man' which he poses in the *Essay Toward a Universal History From a Cosmpolitan Point of View.*[23]

But they stem from some confusions or conceptual illusions, and it may be that a coherent answer can be supplied if we can sort them out. The difficulty really has to do with (*a*) the relation of law and politics and (*b*) the justification of a legal system in terms of its aims, and its justification in terms of its immediate practice.

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First of all, we might, perhaps, agree that politics is the art of the possible.

Thus politicians may have to propose laws which lie within the limits of the agreement one can find in the legislature, and the limits of the behaviour which can be expected of ordinary, prudent men at a given place and time.

The courts, however, must always give a meaning to these laws in terms, as we said at the beginning of this paper, of a general system and its overall aims.

Thus, the courts must (*i*) act to weed out those laws which conflict absolutely with the ideal embodied in a set of legal aims and (*ii*) to give a meaning to what remains and is tolerable to the system. But the law itself does not imply coercion. Coercion enters in only when in one of two ways the law has failed. I may have to be coerced because the courts did not succeed in reconciling the legislation with an ultimate set of legal ideals. Or I may have to be coerced because the law, though rational, did not reach through to my confused, irrational will.

In these cases, the matter returns to the political authority which may or may not set the police on me. But even if it does, the coercion is not part of the law but, in either case, the result of its failure. Grabbing me by the scruff of my neck and putting handcuffs on me may be a procedure authorized by law, but it is not itself a part of the legal process. It is necessary because the legal process has failed in its intended aim which, after all, was to prevent me from doing whatever it was that that the law forbade. When the law fails, it authorizes an alternative. Generally, however, it prescribes the use of the least force possible for the attainment of its ends. I may be handcuffed and locked up but, though the same end—preventing me from doing it again—would be achieved by the use of more force, by gunning me down in the street, for instance, we naturally regard regimes which use more force than necessary as having gone beyond the pale of legality.

Secondly, one must distinguish the two senses of justification. The law will *ultimately* be justified if it does bring about something like the Kingdom of Ends. It may be justified *now* if it can be shown that its actions are those most conducive to bringing about the Kingdom of Ends. Coercion *might* be justified if it could be shown that it led most effectively to the Kingdom of Ends; but its justification, even so, would be relative. What is really justified, as Kant would say, is not the use of coercion on some utilitarian ground but an action justified by the most reasonable application of the Kingdom of Ends principle. In terms of the argument we have presented here, what is justified is the shift from *legal* authority to *political* authority on the ground that the legal authority has failed. But the political authority is still justified only in so far as it departs as little as possible from the principles of legality and morality. For if legal principles derive from some idea such as that of the Kingdom of Ends, there is no *legal* justification for the sacrifice of an individual's well-being for the future well-being of the system, even though there may be political justification. The unsocial sociability of man is a political not a legal problem.

Thus it seems that, if law is really distinct from fiat and force, it is concerned with enabling and promoting activity rather than with restricting it, and the Kingdom of Ends model is most apt. Yet the law must be intolerant of intolerance in order to optimize the possibility of freedom which makes law what it is. But what if these forbidden actions of intolerance should constitute the sole ends which certain agents, as a matter of fact, are capable of at a given time and so they *must* be used solely as means? It would appear that the rule itself must take precedence—that the rule must be that one acts so as to optimize the possibility for a Kingdom of Ends. As Kant had it, one should always act *as if* one were a member of the Kingdom of Ends even if, for the moment, one is not.[24]

There are, however, severe limits to this process. Being able, for instance, to make the right decision in accepting or rejecting propositions is the core of the Kingdom of Ends idea. Such an idea prohibits any arbitrary or *a priori* limitation on the availability of knowledge. Such ideas as that of freedom of the press and such positive ideas as the presumption of access to education are grounded in this notion. The limits of such principles are given by the principle of the intolerance of intolerance from which one may derive at least some basic notions of privacy and individual dignity.

This enables us to return to the questions of the logical nature of legal propositions. The description of the Kingdom of Ends consists of propositions which, *if* they are true and binding, *must* be accepted as *a priori* (i.e. as *prior* to the experience which leads to the actual acceptance or rejection of specific propositions). Yet these same propositions are synthetic. This account of them may make them seem rather unlike Kant's own synthetic *a prioris*. Yet they are, in a sense, the fundamental categorical structure for our experiences of morality in a legal context (which is the only way in which we can experience genuine legality at all). They are specimens of 'pure practical reason' in the sense that they are principles which we must accept if we are to organize our affairs so that we can have moral experiences in a legal context, that is, we can order our affairs by principles of reasoned legality as opposed to ordering them by force and fiat.

On the one side, our basic legal propositions essentially tell us how the concept of law must be construed if it is not to degenerate into a quite different set of concepts, those having to do with fiat and force. The reason for making this distinction, it turns out, is that there are clear conceptual connections between the idea of morality and that of free action. When, as Kant himself sometimes did, one allows the distinction between systems of law and systems of force and fiat to become unnecessarily blurred, the result is that conceptual conflicts arise. Once again, then, the notions involved are a *priori*, essentially because they reside in the conceptual connections, not in any set of experienced facts. But, of course, they are synthetic. The propositions, one makes use of, spell out connections between concepts. One does get conceptual tensions and inconsistencies—or conceptual break-downs—

if one does not pay attention to the conflicts, but they are not formal contradictions.

Again, the thesis we have been advancing does tell us: (*a*) what the limits of legal system are (it specifies those conditions under which a true Kingdom of Ends would not exist); and (*b*) what such a system *must* contain (namely, the conditions for a Kingdom of Ends). Does it tell us how the propositions in the system are to be ordered? We suppose that it does. To start with, it distinguishes those legal propositions essential to the system. They will take first precedence. Then it demands that each rational agent has a unique place. For this to be the case, these legal rules which enrich the possibility for individuating choices will come second in the order. Finally, those propositions, not prohibited, will have a third place. Of course, this will order propositions by classes. But the implication is that, within each class, the choices are open and indifferent to the legal system. It provides, in other words, for a realm of permissible political decision, for the area of legislative openness which common sense suggests, anyhow, is necessary to legal systems.

It also gives a notion of overall aim which can give a sense to consistency in application. For the overall aim, obviously, is the creation of a Kingdom of Ends, another name, if this is true, for the idea of a legal system, as distinguished from a system of fiats or the application of a system of force.

Notes and References

1. These arguments are developed by John Austin mainly in his *The Province of Jurisprudence Determined*, 1832, New York, Noonday Press, 1954.
2. Hart, H.L.A., 'Legal and Moral obligations', in A.I. Melden, (ed.), *Essays in Moral Philosophy*, Seattle, University of Washington Press, 1958, pp. 82-107.
3. Austin, J., *op. cit.*, pp. 186ff.
4. Bobbio, Norberto, 'Sur le positivisme juridique' in *Melanges Paul Roubier*, vol. 1, Paris, Dalloz et Sirey, 1961, pp. 53-7.
5. Kelsen, Hans, *The Pure Theory of Law* (trans. M. Knight), Berkeley, University of California Press, 1961 and *General Theory of Law and State*, (trans. A. Wedberg), Cambridge, Mass.; Harvard University Press, 1946.
6. Hart, H.L.A., *The Concept of Law*, London, Oxford University Press, 1961.
7. Fuller, Lon L., *The Morality of Law*, New Haven, Yale University Press, 1964, p. 129.
8. Sartorius, R., 'Hart's Concept of Law' in *Archiv Für Rechts Und Sozialphilosophie*, 1966.
9. Aquinas, St. Thomas, *Summa Theologica*, part i (2nd section), Question 90. The quotation is from the translation of the *English Dominican Fathers*, London, Burns, Oates and Washburn, 1912-36. For an up-to-date defence of Aquinas' own elaborate and subtle theory see F'elicien Rousseau, *La Croissance solidaire des droits de l'homme*, Montréal and Paris, Bellarmin and Descleé, 1982.
10. Derrida, Jacques, 'Violence et metaphysique, essai sur la pensée d' Emmanuel Levinas' in *L'ecriture et la difference*, Paris, Editions du Seuil, 1967.
11. This account of Dworkin's view is based mainly on *Taking Rights Seriously*, Cambridge, Mass., Harvard University Press, 1977.

12. Finch, John, *Introduction to legal Theory*, (3rd edn), London, Sweet & Maxwell, 1979, pp. 136-44.
13. Dowrkin makes this especially clear in a long reply to Michael Walzer in the *New York Review of Books*, vol. xxx, no. 12, 21 July, 1983, pp. 44-46.
14. Quine, Willard van Orman, 'Two Dogmas of Empiricism', *From a Logical Point of View*, New York, Harper & Row, 1963, pp. 20-47. Quine inists on the *Pragmatic* account: 'Carnap, Lewis and others take a pragmatic stand on the question of choosing between language forms, scientific frameworks; but their pragmatism leave off at the imagined boundary between the analytic and the synthetic. In repudiating such a boundary, I espouse a more though pragmatism'.
15. Kant, Immanuel, *Groundwork of the Metaphysic of Morals*, 1785, (trans. L.W. Beck, ed. Robert Paul Wolff, Indianapolis, Bobbs-Merrill 1969, p. 59, and *Critique of Practical Reason*, 1788 (trans. L.W. Beck, New York, Liberal Arts Press, 1956, p. 85. *Grundlegung zur Metaphysik der Sitten, Werke*, vol. iv. and *Kritik der Praktischen Vernunft, Werke*, vol. v. The 'Kingdom of Ends' does not, of course, constitute the whole of Kant's moral theory. Though (see the note below) Kant often thought of law very differently, it does seem to include just that part of morality which concerns law—that part which makes feasible *a realm* composed of moral agents.
16. Kant's own account of the ordinary positive law is chiefly to be found in Part I of the *Metaphysic of Morals*, 1797 (*Metaphysik der Sitten, Werke*, vol. vi) translated as *The Metaphysical Elements of Justice* by John Ladd (New York, Liberal Arts Press, 1965). There he is concerned, indeed, with the question of a world in which the citizens do not act as if they were members of the Kingdom of Ends; but we would argue that a serious foundation for legal theory in the larger sense is to be found in Kant's moral writings of a decade earlier.
17. Kant, Immanuel, *Lectures on Ethics*, (trans. Louis Infield), New York, Harper & Row, 1963, pp. 29-31. Based on *Eine Vorlesung über Ethik*, reconstructed by Paul Menzer from class notes of a student who matriculated at Königsberg in 1779. Kant gave the course in question from 1775 onwards.
18. Kant, Immanuel, *Was heisst sich in Denken Orienteren, Werke*, vol. viii., p. 139; trans. in Rabel, Gabriele, *Kant*, Oxford, The Clarendon Press, p. 168ff., 1963, as 'What It Is to Orient Oneself in Thought'.
19. Kant, Immanuel, *Recension von Gottlieb Hufeland's Versuch über den Grundsatz des Naturrechts, Werke*, German Academy of Sciences, vol. viii, p. 127ff, partly translated in Rable, *op. cit.*
20. *Über den Gemeinspruch: Das mag in der Theorie richtig sein, taugt aber nicht fur die Praxis, Werke*, vol. viii, pp. 288-96 and 300, trans. by H.B. Nisbet in *Kant's Political Writings*, Cambridge, The University Press, 1970.
21. *Op. cit.*, note 14 above.
22. Kant, Immanuel, *Perpetual Peace*, Appendix II, trans. by L.W. Beck, *in Kant On History*, Indianapolis, Bobbs-Merrill, 1963 (*zum ewigen Frieden*, Anhang II, *Werke*, vol. viii, p. 370ff). The idea behind the 'derivation' seems to be chiefly that publicity is associated with universality. Certainly, the proposition that propositions in general should be kept secret cannot be willed as universal law and, in general, what *needs* to be kept secret cannot be a universal law since, if it were, what would be the point of the secret? Furthermore, must it not be true that what once can safely publicize to all men is what would be perceived as widely acceptable? Yet Kant perhaps means more than this though he does not himself give the 'derivation'. What is *really* 'publicized' is lodged in the consciousness of all men. For it to rest there unchallenged and indefinitely it must surely be generally acceptable to the rational will. See also *Metaphysik der Sitten Werke*, vol. vi.
23. Kant, Immanuel, 'Essay Toward a Universal History from a Cosmopolitan Point of

View', trans. by L.W. Beck, in *Kant On History*, Indianapolis, Bobbs-Merrill, 1963. (*Idee zu einer allgemeinen Geschichte in Weltbürgerlicher Absicht Beantwortung der Frage, Werke*, vol. viii., pp. 15-43.)

24. Kant, Immanuel, *Groundwork of the Metaphysic of Morals*, trans. by J.H. Paton, New York, Harper & Row, 1956, pp. 35, 100-102.)(*Grundlegung zur Metaphysik der Sitten*, Werke, Vol. iv.).

The analytic philosophy of Nāgārjuna and Candrakīrti—some implications*

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A unique insight that steers clear between the extremes of rival theories by the help of analysis was in ample evidence in the method adopted by Buddha in his teachings. And it seems to have reached its culmination in the Mādhyamika thought of Nāgārjuna whose *Mūla Madhyama Kārikā* along with its commentary *Prasannapadā* of Candrakīrti, are landmarks in this direction. In order to comprehend the immense significance of this insight, the notion of *prajnāpāramitā* as the culmination of such a unique insight in Mādhyamika thought needs to be properly understood. For a correct assessment of the exact implications of *prajnāpāramitā*, however, an understanding of the concept of *prātityasamutpāda* and other allied concepts is a necessary prerequisite, specially so in view of the fact that a comprehension of the Mādhyamika version of *pratītyasamutpāda*, as distinguished from the *Hīnayānist* version, is supposed to be conducive to *prajnā* as it is understood in the Mādhyamika context.

According to the Hīnayānist version, *pratītyasamutpāda* implies the causal law, according to which the evanescent momentary things appear. Candrakīrti refers to this version of *pratītyasamutpāda* as *Pratiprati ityānām vināśinām samutpāda*. Pratītyasamutpāda, according to this version, implies the temporal sequence of the entities between which there is a causal relation. This popular version of pratītyasamutpāda is subjected to trenchant criticism by Ācārya Candrakīrti in his *Prasannapadā* commentary on Nāgārjuna's *Mūla Madhyama Kārikā*. A deep insight into the understanding of *pratītyasamutpāda* is evinced by the following analysis of Candrakīrti. *Hetupratyayāpekṣo bhāvānāmutpādaḥ Pratītyasamutpādārthaḥ.*[1] Here there is no implication of temporal sequence of the entities between which there is a causal relation; it merely points to the dependence of one concept on another.

One important consequence of viewing pratītyasamutpāda as a logical theory of inter-dependence of concepts, instead of taking it as a theory of causation on the empirical world, if that it is identified with *śūnyatā* which, in its turn, is identified with *niḥsvabhāvatā* and also with the *madhyamāpratipad*, thus making the entire Buddhist thought appear as one systematic and harmonious whole with a central message of its own, which, to be precise enough, is not a message but a paradigm of philosophical activity. Here we

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are reminded of the famous kārikā of Nāgārjuna: '*Yaḥ pratītyasamutpādaḥ śūnyatām tām pracakṣmahe, Sā prajñāptirupādāya pratipat saiva madhyamā.*' The *Hīnayānist* version of *pratītyasamutpāda* as a theory of causation in the empirical world is criticized vehemently by the Mādhyamika Philosophers such as Candrakīrti, and a unique conceptual revolution is launched in the philosophical firmament by a revealing, and consequently a novel, insight into the nature of one of the most fundamental, rather the key, concept of Buddhism, that is, pratītyasamutpāda. As the *Sālistamba Sūtra* says, '*Yo bhiksavaḥ, Pratītyasamutpādam paśyati, sa buddhaṃ paśyati, yo buddham paśyati sa dharmaṃ paśyati,* or as the Pali version in *Majjhima Nikāya* points out: '*Yo paṭiccasamuppādam paśśati so dhammam paśśati; yo dhammam paśśati so paṭiccasamuppādaṃ paśśati.*' Such is the status of *pratītyasamutpāda* in the Buddhist literature; it is as it were the cornerstone of the entire Buddhist philosophy. And what is this pratītyasamutpāda which is identified with dharma and even Buddha? It does not imply the temporal sequence of entities between which there is a causal relation; it points to the dependence of concepts upon one another. This mutual interdependence of concepts is, according to Nāgarjuna, the same as *śūnyatā* which is nothing but *niḥsvabhāvatā*, that is, essencelessness of the concepts. If every concept is dependent on another for its intelligibility, how can it be said to have a fixed essence of its own? One who understands *pratītyasamutpāda*, that is, mutual dependence or *parasparāpekṣā* of concepts, also understands that they are all *śūnya* or *niḥsvabhāva*, i.e. they do not have an independent and permanent essence of their own. This is also what Buddha means by *madhyamāpratipad* according to Nāgārjuna, inasmuch as the realization of the *śūnyatā* or *niḥsvabhāvatā* or essencelessness of concepts steers clear between extremes of speculative metaphysical positions regarding the *svabhāva* or the fixed nature of things, and thus makes one adopt a middle course amongst the contending metaphysical theories.

Pratītyasamutpāda, taught by Buddha, is described in negative terminology by Nāgārjuna as '*anirodhamanutpādamanucchedamaśāśvataṃ, anekārthamanānārthamanāgamamanirgamaṃ*'. And this is the *tattva*, that is, the exact or the real nature of the case, according to the Mādhyamikas. *Pratītyasamutpāda* which is the same as *śūnyatā*, being thus the *tattva* or the true significance of the concepts, one cannot meaningfully talk of its origination, destruction, etc. And when this is realized, there is freedom from essentialist thought-construction and craving of the mind, and that is why *tattva* is said to be '*aparapratyayaṃ śāntaṃ prapancairaprapancitaṃ*'. All these descriptions are not applied to any Absolute Reality transcending thought; they only describe the state of affair when one realizes the *śūnyatā* or *niḥsvabhāvatā*, that is, essencelessness of all our ideas and concepts. *Śūnyatā* which is identified here with *pratītyasamutpāda* neither implies unreality of things as misconceived by T.R.V. Murti nor does it imply an Absolute as also misconceived by C.D. Sharma. In the words of T.R.V. Murti, *pratītyasamutpāda* is 'equated with the unreality of things (*niḥsvabhāvatā* or *śūnyatā*). This is the revolution in

Buddhist thought initiated by the Mādhyamika.'[2] At another place Murti says that *pratītyasamutpāda* 'is now equated with *śūnyatā*—the empirical validity of entities and their ultimate unreality'.[3] C.D. Sharma speaks of *śūnya* as 'reality which ultimately transcends existence, non-existence, both and neither'.[4] At another place Murti also identifies *śūnyatā* with 'the non-relational knowledge of the Absolute'.[5]

Here there is a definite allusion to the distinction between *svabhāvaśūnya* and *prapancaśūnya* worked out in Nāgārjuna's philosophy. Murti's identification of *pratītyasamutpāda* with the *śūnyatā* in the sense of unreality of things refers to *svabhāvaśūnya*, where as Sharma's understanding of *śūnyatā* as Reality refers to *prapancaśūnya*. But there seems to be no reason for identifying *svabhāvaśūnyatā* with unreality of things, nor is there any justification for identifying *prapancaśūnya* with a Reality over and above this world. *Svabhāvaśūnyatā* only means the essencelessness of all concepts which follows from mutual interdependence of concepts (*pratītyasamutpāda*); there is no question of an ultimate reality here by contrast with which the world is declared as ultimately unreal.

Prapancaśūnya means devoid of metaphysical thought constructions and, in that sense, of plurality. *Tattva* is said to be *prapancaśūnya* and *nirvikalpa*, i.e. devoid of all speculations in the Mādhyamika literature. But is not *nirvāṇa* also said to be *prapancopaśama*? And what is *nirvāṇa* but a state of affair where there is absolute cessation of metaphysical thought-construction on account of the realization of *svabhāvaśūnyatā* or essencelessness of all concepts? It is, therefore, evident that *tattva*, which is said to be *prapancaśūnya*, does not refer to a transcendent Reality over and above the realization of the *svabhāvaśūnyatā* of concepts. Once *niḥsvabhāvatā* of concepts is realized, the *tattva* is not further away, for prapancaśūnyatā immediately and inevitably follows from the realization of *svabhāvaśūnyatā*. And that is why *pratītyasamutpāda* itself is said to be *prapancopaśama* and *śiva* by Nāgārjuna. Candrakīrti's remarks in this connection are quite illuminating: '*Yathāvasthita pratītya samutpāda darśane sati āryāṇāmabhidheyādilakṣaṇasya prapancasya sarvathoparamāt prapancānāmupaśamosminniti sa eva pratītya samutpadaḥ prapancopaśama ityucyate.*[6] Stcherbatsky very rightly sees that in the above passage Candrakīrti identifies the realization of *pratītyasamutpāda* with *nirvāṇa*. His translation runs as follows:

> It is also called Nirvāṇa, the Quiescence or equalisation of all plurality, because when it is critically realised there is for the philosopher absolutely no differentiation of existence to which our words and concepts could be applied.[7]

The exact or the true nature of the case in question (*tattva*), therefore, lies in *pratītyasamutpāda*, which is the same as *śūnyatā* in the sense of *svabhāva śūnyatā*, the realization of which alone gives rise to *prapancaśūnyatā*, i.e. free-

dom from thought-constructions. So long as we are unable to realize the *niḥsvabhāvatā* and so long as we are under wrong impression, on account of entertaining an essentialist picture of concepts in our mind that things have a permanent and independent nature of their own, *prapanca* or conceptual construction continues to be there. The truth or *tattva*, however, is that neither is there any independent nature or *svabhāva* of things, as conceived by the unenlightened, nor is there any scope for conceptual construction, i.e. *prapanca*. The realization of this truth is *prajñāpāramitā*. '*Prajñā yathābhūtaṃ arthaṃ prajānāti.*' *Prajñā* consists in the knowledge of the case as it obtains. *Madhyamāpratipat* or the middle path of Buddha is also regarded as seeing or the understanding of the *dharmas* as they are. '*Madhyamāpratipat dharmāṇām bhūtapratyavekṣā.*' There is no implication in the Mādhyamika Philosophy of Nāgārjuna of *prajñā* as the knowledge of an Absolute Reality: when one realizes the *śūnyatā* or *naiḥsvābhāvya* of all concepts and desists from indulging in all sorts of thought-constructions, that is the state of *prajñā*. This *prajñā*, in the sense of realization of *śūnyatā*, alone is considered to be the highest end or *praramārtha*, according to the Mādhyamikas. T.R.V. Murti seems to come near the realization of this truth about the Mādhyamikas when he says that 'in the mādhyamika it is truer to speak of the intuition (*prajñā*) itself as the Absolute' but his profuse reference to an Absolute as incommensurable or the Real as non-dual, transcendent to thought, inexpressible, etc. are highly misleading. There is no absolute which, as Murti suggests, is the reality of the apparent (*dharmāṇām dharmatā*) or their real nature (*vāstavikaṃ rūpaṃ*). Nor is it a fact that 'phenomena are the veiled form or false appearance of the Absolute (*samvṛtaṃ rūpaṃ*)'[8]. For Mādhyamikas the fact appears in its true light when we realize *naiḥsvābhāvya* of concepts leading to *prapancaśūnyatā*, while, if we take them as consisting of an essence of their own to which we can cling, we only see their veiled form (*samvṛtaṃ rūpaṃ*) as it were. It is not that a Reality of an altogether different order, hidden behind the appearance, is grasped in *prajñā*, but it is like something getting revealed in our understanding, which was all the while there unnoticed in front of us. It is our understanding which makes all the difference. And that is why Nāgārjuna points out in very clear terms that there is not even the slightest difference between *saṃsāra* and *nirvāṇa*.[9] The world does not change in *nirvāṇa*, there is only a change in our understanding and manipulation of concepts. It is, therefore, a positive misconception to think, as Murti does, that 'the Absolute is that intrinsic form in which things would appear to the clear vision of an Ārya (realized saint) free from ignorance'. The intrinsic form in which the fact would appear to the clear vision of an Ārya (the enlightened) in *naiḥsvābhāvya* or essencelessness of concepts, and this is the only truth which is not dependent on anything else. But to call it an absolute would be hypostatizing a truth about the concepts into an ontological Being, which does not find any justification in the writings of Nāgārjuna and Candrakīrti. Further to identify *prajñā* with 'intuition', as is done

by Murti, is no less misleading; it is better understood as insight into the nature of concepts as also things, obtained through analysis, resulting in freedom from all thought-constructions.

What then are the various implications of this *prajñā* which is free from all thought-constructions? Freedom from all sorts of metaphysical vagaries is the ideal here. One concept leads us to another, one idea leads to the other, and this is alright in its sphere. But metaphysicians make an illegitimate use of these concepts, thereby falling into the trap of absolute confusion. Philosophical insight consists in avoiding these extreme metaphysical positions by a perfect understanding of these concepts as *śūnya* or *niḥsvabhāva*. The philosopher like a good shepherd checks the metaphysical vagaries from taking the upper hand. That all sorts of metaphysical speculations are to be consistently avoided is clear from the following statement of Buddha—'*Astīti nāstīti ca kalpanāvatāmevaṃ carantāna na duḥkha śāmyati*'—i.e. those who speculate about existence and non-existence will never realize the cessation of suffering. Commenting on this Candrakīrti enumerates a number of rival theories available in his time, e.g. those of Jaimini, Kaṇāda, Kapila, the Vaibhāṣikas, the Sautrāntikas and the Yogācāras, etc., which, according to him, are not conducive to the cessation of misery. This shows that freedom from these contending metaphysical theories is one of the essential features of philosophical insight (*prajñā*), according to the Mādhyamikas. But this is possible through a realization that there is no essence to hang upon or to cling to in our ordinary discourse which is merely convenionally useful. Once this is firmly entrenched in the mind of the philosopher, he would desist from committing those errors which an essentialist or *Svabhāvavādi* is likely to commit. He, for example, would not side with any of the opposing theories of *śāśvatavāda, ucchedavāda, niyativāda, ahetuvāda, viṣamahetuvāda, akriyāvāda, nāstikavāda*, and the like. An essentialist, of course, becomes an easy prey to such metaphysical vagaries. Considering that things of the world have a fixed *svabhāva* or nature of their own, essentialists are misled by metaphysical pictures of reality. Rival pictures then hold sway on their minds which keep them in bondage as it were. *Prajñā* consists in freedom from this bondage of essentialist picture-thinking (*sarvakalpanākṣayarūpa*), and that is all. *Nirvāṇa*, it may be mentioned here, is non-different from this critical insight *par excellence* which is free from the essentialist picture-thinking.

Buddha fought consistently throughout his life against such picture thinking, and because of that he remained silent on a number of questions regarding transcendental reality. Buddha's silence has been variously misunderstood and misinterpreted as a sign of ignorance, scepticism, agnosticism, or a lack of concern for metaphysical issues and so on. But, as a matter of fact, it was nothing if not a consistent effort on his part to avoid all sorts of thought-constructions. Buddha is said to have adopted a middle course, a *madhyamāpratipat*, avoiding the extremes of metaphysical positions. Chandrakīrti also, true to this central idea of Buddha, lays emphasis on silence or *tūṣṇīṃbhāva*

as the *paramārtha*. '*Paramārtho hi āryāṇām tūṣṇīmbhāvaḥ.*[10]' Here it is not the silence of agnosticism or of scepticism; it is the silence on account of a retreat from commitment consequent upon the dawning of *prajñā* or critical insight into the logical behaviour of concepts as *śūnya* or *niḥsvabhāva*. It is not mere *prajñā*, it is *prajñā* or 'insight' *par excellence*, according to the Mādhyamikas. This I consider to be a unique contribution of Buddhism in general and of Nāgārjuna and Candrakīrti in particular to world philosophy.

Here again it is deplorable that metaphysical commitments of some Buddhist scholars of eminence stand in the way of proper understanding of the implications of Candrakīrti's insight. Stcherbatsky, for example, translates the above statement of Candrakīrti as follows: 'About the Absolute the saints remain silent.'[11] It is astonishing how and why Stcherbatsky smuggles in the concept of an Absolute in a context where it is entirely out of place. The question that is raised by the opponent in this context is *Kim Khalu āryāṇāmupapattirnāsti.* The Mādhyamikas insist that they do not have any assertion of their own; but how is it that, the opponent asks, you seem to make a definite assertion, viz. that entities arise neither out of themselves nor out of something different, nor out of both nor at random and so on? To this the Mādhyamika replies as follows: 'This appears to be a definite assertion to the simple folks who try to understand it, according to the arguments familiar to them but not to the Āryas or the enlightened, i.e. the philosopher.' To this the opponent again raises the following objection: is there no argumentation for the enlightened, i.e. do they not believe in argumentation? To this question the final answer is given by Candrakīrti as follows. Who can say whether they have arguments or not? For them the highest good lies in silence in face of unending metaphysical controversies. Here the question was about argument, definite assertion, etc. the point at issue being the argument advanced by Nāgārjuna regarding the untenability of a number of contending essentialist conceptions of causality, and the statement made by Candrakīrti that it does not amount to a definite assertion. Hence it is quite evident that the Absolute is not at issue, nor does it come to the picture here until and unless one smuggles it in. The answer of Candrakīrti is simply meant to point out that silence is the highest end for a philosophically enlightened person. As all 'isms' are out of place here and as all thought-constructions are to be carefully avoided, the highest good or the highest end (*paramārtha*) for the enlightened one lies in silence in face of contending metaphysical theories. It has absolutely no implication that there is a Reality over and above this world which is to be realized through silence. To translate *paramārtha* as Absolute is certainly misleading in this context. One is reminded here of the warning of Candrakīrti that if someone says that he has got nothing to sell, let it not be understood that this very 'nothing' or the absence of everything is going to be sold. To put it in Candrakīrti's own words which are full of sarcasm and humour and are most illuminating at the same time: '*Yo na kincidapi paṇyaṃ dāsyāmītyuktaḥ, sa ced dehi bhostadeva mahyaṃ na kiṃcinnāma paṇyamiti brūyāt, sa kenopāyena śakyaḥ paṇyābhāvaṃ grāhayituṃ.*'

The enterprise is not to be confused with nihilism either. The emphasis is on a model of philosophical analysis resulting in an illumination regarding the nature of concepts as also things as essenceless (*niḥsvabhāva*). A remarkable anxiety on the part of Mādhyamika thinkers that their philosophical enterprise should not be misconstrued as nihilism is visible to even a casual reader of their literature. Nāgārjuna's *Kārikā* in this connection is well known: '*Śūnyatā sarvadṛṣṭīnāṃ proktā niḥsaraṇaṃ Jinaiḥ, Yeṣām tu śūnyatā dṛṣṭiḥ tānasadhyān Vabhāsire.*[12] Candrakīrti, while commenting on this *Kārikā*, refers to Buddha's instructions to Kāśyapa as follows: 'O Kāśyapa, it would be better to entertain the substance-view (*pudgala dṛṣṭi*) of the magnitude of mount Sumeru than to hug the *śūnyatā* view of the nihilist (*abhāvābhiniveśinaḥ*). I call him incurable who clings to *śūnyatā* itself as a theory.' Prajñākaramati also condemns *śūnyatābhiniveśa* (clinging to nihilism as a theory) in clear terms.[13]

What is important here is the attainment of *prajñā* or critical insight into the nature of concepts as also things as *niḥsvabhāva*, and this is what I would call illumination through analysis.[14] The question of its practical impact on mankind is not strictly within the purview of this paper. However, it may not be utopian to suppose that there would be little scope for indulging in a rigidly self-centred existence arising out of a desperate clinging to immutable essence on the part of one, be it an individual or a nation, who takes to such a philosophical activity with some seriousness, not to speak of one who has got the illumination of essencelessness (*niḥsvabhāvatā*) of concepts as also things through this typical analysis.[15] In any case, it deserves to be given a fair trial at least in mass education.

I am aware that my understanding of the Mādhyamika enterprise will have to face severe opposition from at least two different quarters. The first opposition, and a formidable one for that, should come from the mystical and the religious tradition developing through centuries in and around Buddhism along with their elaborate practices. Now what to do about this tradition which, of course, is very much there and stares us in our face both in and around Buddhism? I do not deny the fact but I submit that let this be not confused with and be kept distinctly separate from the philosophical enterprises of Buddhist thinkers like Nāgārjuna and Candrakīrti. Even an analytical thinker may concede to different religious practices and mysticism of some type or the other on account of a number of considerations which are strictly speaking not philosophical. Here I confine myself, however, to a consideration of the philosophical insight brought about by a philosopher, so that it may not be lost in the maze of popular practices and obscurantism in the name of mysticism. Even a philosopher advocating some mystic illumination is, it should be borne in mind, not a simple mystic. It will not do to say that there was no sharp distinction between philosophy and religion and

mysticism, etc. in the days of Nāgārjuna, and that, therefore, this programme of drawing a sharp distinction between philosophy and religious practices is entirely misdirected. Philosophers, wherever and in whatever period of history they have taken their task seriously, have always given an indication, in howsoever clumsy and unclear manner it may be, as to what they are up to and how they are concerned with understanding through argumentation and analysis; and even if they might have pointed to some domain which is beyond discursive thought that also they have done by means of analysis and argumentation. This is how they have always indicated how they are to be distinguished from the common man, simple mystics and religious preachers who go by heresy or revelation. And this is all the more true of philosophers like Nāgārjuna and Candrakīrti and their philosophical enterprise which has nothing to do with any transcendent reality. If some of them were not mere philosophers and had other axes to grind also, and if they were also interested in some enterprise other than philosophy, this is not at issue here. A philosopher may very well be in other respects a humanist, a politician, a historian, a poet, an agriculturist, a religious man and what not. What I want to point out is that we are to assess his philosophical brilliance only with reference to his philosophical arguments, not through his religious or secular practices or even by his sheer convictions regarding these issues. A philosopher, moreover, is distinguished by and through his philosophical arguments, not so much by the position he holds, for similar position may be held by a non-philosopher without understanding their exact philosophical implications. And I have here submitted the philosophical arguments of Nāgārjuna and Candrakīrti to critical analysis in order to see what exactly are the implications of these arguments without any prejudice to the Buddhist religious practices *vis-à-vis* the practices of other religions. Religion as a phenomenon of life has grown along with philosophy in the history of mankind. But while trying to understand philosophical arguments of an eminent philosopher, we should not allow religious dogmas or practices prevalent in the tradition to interfere with the understanding. A tradition grows and comes to be established not only because of a particular philosophy but because of so many other vital factors such as historical, sociological, etc. and this should not be lost sight of while assessing the merits of a philosophical insight which may be entirely independent of the merits and demerits of a tradition. It is, of course, not denied here that a separate and quite a fruitful study of tradition can be made to bring out the salient features of religious practices and the mystic beliefs associated with them, and such a study may, no doubt, be illuminating also. But my only humble submission is that let this be not confused with the philosophical enterprise of philosophers like Nāgārjuna and Candrakīrti, and let the merit of the philosophical insight of these great thinkers be assessed philosophically without any bias, religious or otherwise. And this I have tried to do in my small way in this article. The concept of *śūnyatā* in Nāgārjuna and Candrakīrti, I submit, is neither mystical[16] nor religious; it

points to *niḥsvabhāvatā* or essencelessness which needs to be realized through philosophical analysis (*catuṣkoṭi tarka*), and thus an insight or illumination is gained into the nature of things and concepts which itself constitutes *nirvāṇa* (*sarva kalpanā kṣaya rūpa*).

The second objection might come from the direction of both common-sense and scientific findings, but I do not think that it poses any real difficulty for the Mādhyamika thesis. Both common-sense and science acquaint us with what appear to be fixed essences; as a matter of fact, our whole transaction in day-to-day existence is based on the assumption that things have stable properties. Recent biological discoveries, for example, far from confirming the thesis of essencelessness, seem to favour an opposite thesis. Much of the similarity between organisms related by descent, we are told,[17] is due to their possessing similar inherited material, i.e. a complex and diverse material that gives rise to accurate copies of itself, units of which are passed from parent to offspring which is very stable in its properties, and which profoundly influences every aspect of the organism containing it. Each individual starts life with a set of this material received from its parent or parents. During subsequent growth (in multicellular organism) or reproduction (when the organism is not multicellular) the material is duplicated repeatedly with great exactness of copying (the process of replication); it influences the characteristics developed by the individual bearing it, so that similarity between related organisms results; and a set is handed on to each of the individual's progeny. One of the great biological discoveries of this century is that the material of inheritance, the genetic information, is deoxyribonucleic acid (DNA). Is it not an evidence in favour of stability rather than essencelessness?

Now it should be pointed out that a philosophical enterprise or activity such as that of Nāgārjuna and Candrakīrti is not affected either by common-sense findings or any scientific discovery for that matter, for all these are here taken care of by concepts like *loka samvṛti satya*. Stability, as conceived in common-sense or scientific findings, is not denied out of existence by the *śūnyatā* or *niḥsvabhāvatā* doctrine of Nāgārjuna. What is denied is the ontology of immutably fixed and independent metaphysical essences of things as well as concepts, leaving our day-to-day transactions unaffected. This point has been brought deliberately into discussion just to clarify the exact import of the philosopher's activity *vis-à-vis* that of a common man or a scientist. It is the *svabhāvavāda* or the metaphysical doctrine of essences which is under fire at the hands of the Mādhyamikas, not the working stability of common-sense or as it figures in scientific enquiries.

Considered from a practical point of view it does not pose any problem for the philosopher; the problem arises only when *svabhāvavāda* or a metaphysics of *svabhāva* is built on our common-sense transactions or scientific findings. *Śūnyatā* doctrine of Nāgārjuna and Candrakīrti can thus be seen to be unaffected by challenges either from the side of common-sense or science; such objections, if at all they are raised, would rather be based on a misunderstanding of the nature of philosophical activity.

NOTES

1. *Prasannapadā*, First Prakarana.
2. T.R.V. Murti, *The Central Philosophy of Buddhism*, London, 1955, p. 195.
3. *Ibid.* pp. 7-8.
4. C.D. Sharma, *A Critical Survey of Indian Philosophy*, Delhi, 1973, p. 86.
5. Murti, *op. cit.* p. 160.
6. *Prasannapadā*, First Prakarana.
7. Stcherbatsky, *The Conception of Buddhist Nirvana*, Bharatiya Vidya Prakashan, Varanasi, p. 134.
8. Murti, *op. cit.*, p. 232.
9. Cf. *Mūlamadhyama Kārikā: 'Na samsārasya nirvāṇāt kincidasti viśeṣaṇam, na nirvāṇasya samsārāt kincidasti viśeṣaṇam. Nirvāṇasya ca yā koṭiḥ koṭiḥ samsaraṇasya ca, na tayoḥ antaraṃ kincit susūkṣmamapi Vidyate.'*
10. *Prasannapadā*, First Prakarana.
11. Stcherbatsky, *op. cit.*, p. 207.
12. *Mūlamadhyama Kārikā*, 13..8
13. Cf. *Prajñākaramati, Bodhicaryāvatāra Panjikā*, 9th chapter on Prajñāpāramita. *'Niḥsvabhāvataiva Sahva-bhāvānām nijaṃ pāramārthikaṃ rūpamavatiṣṭhate. Tadeva pradhānapuruṣārthatayā paramarthaḥ utkṛṣṭam prayojanamabhidhīyate. Atrāpi nābhiniveṣṭavyam. Anyathā bhavābhiniveśo vā śūnyatābhiniveśo veti na kaścidviśeṣaḥ, ubhayorapi kalpanātmakatayā samvṛtatvāt"*.
14. Cf. *Ibid.*, *'Prajñā Yathāvasthitapratityasamutpanna vastutattva pravicaya lakṣanā'* and also *'Vipaśyanām prajñāpara namadheyām'*.
15. Cf. *Ibid.*, *'Samāhitacetaso yathābhūtadarśanam bhavati. Yathābhūtadorśina bodhisattvasya sattveṣu mahākaruṇā pravartate.'*
16. Difference of my position from that of some contemporary writers on the subject like Tilmann E. Vetter of Kern Institute, Leiden University, who speaks of 'mysticism of voidness' or of 'a mystical goal' in this connection (cf. his paper published in *Acta Indologica*, vol. vi, 1984) is quite evident. Mystical tradition is only one of the many trends in Buddhism and should on no account be allowed to interfere with the philosophical position of Nāgārjuna and Candrakīrti which advocates illumination through analysis.
17. Cf. *The Penguin Dictionary of Biology*, seventh edn, pp. 123-24.
18. Cf. *Prasannapadā*, Fifteenth Prakaraṇa, *'Nanu ca gopalānganajana-prasiddhametād—Agneraušṇyaṃ svabhāvamiti. Kim Khalu asmābhiruktaṃ na prasiddhamiti! Etattu Vayaṃ brūmaḥ—Nāyaṃ svabhāvo bhavitu-marhati, Svabhāva lakṣaṇa viyuktatvāt..'*

On classifying Indian ethical systems

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INTRODUCTION

It is well known that the doctrines of transmigration and *karma* permeate the Indian philosophical and religious scene. As is also well known, these doctrines raise various interesting and difficult questions. Some are questions of epistemology: how could one confirm these doctrines?

Perhaps one could confirm them empirically by reference to either or both of the rather rare cases in which there are at least apparent memories of past lives which occur outside of any particular religious context; or to those apparently rarer enlightenment experiences in which a person allegedly remembers all of his past. That the latter sort of experience ever occurs is itself a belief in something which seems to presuppose one or another view of the world which includes precisely the claims in question. The former sort of experience (in cases that involve neither deceit nor fraud) is open to multiple explanations, some of which only involve appeal to the doctrines in question. At the best, then, such experiences are rare and underdetermine the doctrines in question.

It would seem, then, that the doctrines of transmigration and *karma*—in significant part, at least, and as one might well have expected—must be primarily assessed in terms of whether or not they play an essential role in an overall philosophical or religious system which solves more problems, or solves them better, than alternative systems without thereby raising still other problems as difficult, or more so, than the ones it solves.

Other questions concerning *karma* and transmigration are metaphysical. Central among these are topics concerning personal identity. Unless the doctrines are radically revised—so much so that it is not clear that they have not been covertly rejected—they involve the claim that, morally speaking, the same person that sows also reaps. This involves identity through, and also across, particular individual lifetimes. Central to this matter is whether such identity is possible only if persons are mental substances (as Jainism maintains) or whether some non-substantival view will also permit such identity (as Buddhism on the whole holds, where it does not make transmigration itself merely illusory).

Along with these epistemological and metaphysical issues, there are also issues in moral philosophy. It will be helpful, in considering the broad outline of these issues, to bear in mind the problems with whose description we began.

Act-Morality

It is standard to classify ethical systems in 'western' philosophy as 'denotological' and 'teleological', or as 'non-consequentialist' and 'consequentialist'. The items so classified are systems of act-morality—moral theories constructed to sort out right actions from wrong ones.

For two reasons, at least, it is not obvious that the deontological/teleological distinction is as deep as it is often taken to be. One is this: the teleologist or consequentialist, we are standardly told, considers the consequences of an action when deciding whether it is right or wrong, whereas the non-consequentialist or deontologist considers the action's properties. Suppose, that *A* steals *B*'s purse; then one can say that *A*'s action is grasping the handle of the object nearest her and running away, and the consequence is that *B*'s purse is stolen; or one can describe *A*'s action as *stealing B's purse*. If one insists on describing an action only in terms of properties which cannot also be viewed as consequences, perhaps one is then limited to describing actions in terms of basic motor activities; and this restriction seems entirely arbitrary. If one insists that an action cannot have as properties items that begin only after it ceases to exist, one can also insist that an action cannot itself (as opposed to a causal chain of which it is a part) have as consequences items that begin after it ceases to exist.

The other is: if one opts for the priority of goodness over rightness, the distinction between non-consequentialist and consequentialist perspectives will arise only in the less basic or more derivative part of one's moral theory. A complete ethical theory will contain at least a theory of the morality of actions and a theory of the morality of agents. Such a theory may opt for the priority of the right, the priority of the good, or the parity of the right and the good. That is, a moral theory may characterize a right action as one that satisfies a certain criterion, and then define a good person as one who characteristically performs right actions. Then one embraces the priority of the right over the good. By contrast a moral theory may say that a good person is one who at least strongly approximates some ideal, and then define a right action as an action such a person characteristically performs. Then one embraces the priority of the good over the right. Or a moral theory may define a right action as one that meets a certain criterion and good a person as one who meets a certain ideal, without trying to define either of the pair 'right action' and 'good person' in terms of the other. The one embraces the parity of the right and the good.

One question, then, is: are Indian ethical theories typically deontological or teleological? A more probing, and logically prior, question is: are Indian ethical theories typically committed to the priority of the right, or of the good, or to parity of the right and the good? Or, of course, it might be that Indian ethical theories resist classification in such ways as these.

The Commensurability Principle

A really basic division that typically arises within act-morality, though it may also arise within agent-morality, is between those who embrace and those who reject the commensurability principle. This principle says that if *X* and *Y* both have value, then their value is quantifiable and measurable in common value terms; and that if *X* has value, its value is quantifiable. All values, whatever the idea is, are measurable in some common value coin. A consequentialist perspective typically accepts the commensurability principle, and a non-consequentialist perspective typically denies it; if one continues to use the standard terms, this difference regarding the commensurability principle is a rather deep moral difference between consequentialism and non-consequentialism.

The usual defence of commensurability is that unless one embraces it, one will have to admit that rationality in making moral decisions is unattainable. One is supposed to believe that a mother, who cannot discern the common value coin in which her children and her violets can be measured, cannot rationally choose to rescue one from a fire rather than the other.

Since it is profoundly dubious that there is any plausible candidate for being the unit of common value, a necessary condition of the commensurability principle's truth seems unfulfilled. Since the assignment of units of value to competing goods—to enjoying an ice cream cone, listening to Beethoven's Fifth, understanding Kant's ethics, showing kindness, saving a life, etc.—is itself patently arbitrary, the assignment of such values will introduce no rationality into moral reflection or ethical choice. The idea that only if such common measure is available can rational decisions be made between competing moral values is the sheerest superstition.

Agent Morality

Agent morality has the task of discerning the conditions under which a moral agent is praiseworthy or blameworthy, or, probably more adequately, of stating what conditions a person must meet in order to be good rather than evil. There are, of course, metaphysical questions concerning what conditions are necessary and sufficient for being a moral agent. Must, for example, one be autonomous in the sense that there are morally significant actions (actions that are right or else wrong) which one, under actually prevailing conditions, can really perform or refrain from performing?

Moral agency is presumably a matter of being able to determine one's moral character. A plausible and standard model, which makes autonomy a condition of agency, views persons as moral agents because they make morally significant and free choices which, over time, yield dispositions to act rightly (virtues) or dispositions to act wrongly (vices). It is open, at least, to such a perspective to define a good person as one who possesses certain

virtues, and regard as right only those actions whose performance will produce such virtues in their agents.

Do, then, Indian moral philosophies tend to accept the priority of the good over the right, or the right over the good, or the parity of rightness and goodness? Or is the very attempt to so classify such systems productive of more confusion than clarity?

Enlightenment Morality and Consequentialism

At least to the very considerable degree that Indian ethical systems have a basis in some transmigration-and-*karma*-accepting worldview, their highest good will tend to be the achievement of a state which is commonly called 'enlightenment'. What, exactly, being enlightened involves varies quite considerably from tradition to tradition; and in some cases becoming enlightened seems hardly strictly an achievement, since it is at least unclear that (so to speak) the achiever survives or endures into, let alone through, his accomplishment. Nonetheless, enlightenment is commonly regarded as the *summum bonum* in an Indian ethical theory. It is standardly taken to be that for which all else is undertaken, at least in so far as one behaves fully rationally or seeks what has greatest inherent worth.

It seems to me at best atypical for Indian tradition in which enlightenment is prized for enlightenment to be considered—as acceptance of the commensurability principle would require—as something to be sought only on condition that complicated calculation yielded that result, or (as commensurability also requires) to suppose that for such a tradition a lot of small values might, toted up, outweigh the value of enlightenment. For such traditions, becoming enlightened is—to mix metaphors cross-culturally—the pearl of great price for which all else is to be sacrificed and in comparison with which all else is as dung. If this is correct, such views are not teleological or consequentialist —particularly they are not typically consequentialist if it is typically consequentialist to embrace the commensurability thesis.

To call Indian ethical theories of this sort 'deontological', however, seems hardly very helpful, for what these traditions stress is not particularly that actions are to be weighed in terms of their morally relevant properties rather than their morally relevant consequences. Their core emphasis clearly lies elsewhere.

This is not to deny that, when one considers what are regarded as lesser values, there may be important place for a subsidiary consideration of which action among a relevant set may yield most pleasure or least pain, or most gain or least loss regarding money or understanding or the like—considerations which will not, therefore, require that one be able to quantify such gains or losses if one is to make such choices rationally.

Enlightenment State Morality

In an effort, then, to encompass Indian ethical systems in an adequate system of classification, one might suggest that such systems, in so far as they embrace transmigration-and-*karma* doctrines which lead them to view an enlightenment that includes escape from transmigration and involves loss of all *karma* as the highest and incommensurable good, be called *enlightened state moralities*. It is not actions which are the basic focus of moral attention; actions are of moral interest only in so far as they contribute to the attainment or non-attainment of enlightenment, or make attainment in the long run more difficult, or postpone that attainment, or the like.

The question, of course, also arises as to whether the value of attaining enlightenment is a moral, as opposed, perhaps, to a religious-but-not-moral value, or the like; but to consider this here would lead us far afield. I shall simply assume here, for convenience and in a quite tentative way, that such values are moral, leaving this matter for discussion elsewhere.

Is it also true that such Indian moral systems as we have been discussing place the moral worth of the enlightenment state over that of being a good person, so that we have, not the priority of good over the right, but the priority of the enlightenment state over the good as well as over the right?

I think that the answer is: sometimes. In such systems as Jainism and the varieties of *bhakti* theism (e.g. in Ramanuja and Madhva), there is a strong insistence on the continued existence of the human person upon achievement of the enlightenment state. What becomes enlightened is not merely what used to be the person in question. Here, if we continue to waive the question as to whether becoming enlightened is an item of supreme *moral* value, one has a person viewed as supremely morally good only upon attaining enlightenment; and this will then be a case of the good having priority over the right. Even without the assumption that what is thereby achieved is of supreme moral value, a good-for-persons is viewed as supreme and thus as having priority over any rightness-of-actions which subserves the good-for-persons.

In such systems as most varieties of Buddhism and Advaita Vedanta Hinduism, enlightenment is conceived in such a manner as to amount to a person 'achieving' a state which involves all loss of personal identity, whether in *nirvāṇa* or in *nirguṇa* or qualityless Brahman. Here, even if the rightness-of-actions is subjugated to the goodness-of-persons, the goodness-of-persons is itself subjugated to the a-personal value of enlightenment.

In sum: Jain enlightenment experience (*kevala*) and *bhakti* enlightenment experience (personalistic *mokṣa*) at least roughly fit the pattern of the priority of the good over the right. In Buddhist enlightenment experience (*nirvāṇa*), save in the rare and almost heretical personalist schools, and Advaita Vedanta enlightenment experience (a-personalistic *mokṣa*), one has a further (not, therefore, superior) step in which priority is removed from the good and transferred to an a-personal state.

I close by stressing that this modest effort at providing a more adequate than usual classificatory system for Indian systems of moral philosophy has severe limitations. It has waived the question as to whether moral values are, for these systems, ultimate. It has not woven into its discussion materialist moral systems which avoid all commitment to transmigration-and-*karma*. It has not much woven into the discussion the 'lesser' traditional values short of enlightenment. It has not entered into the important details of Indian moral philosophy.

Still, perhaps it has its values. If the overall perspective on Indian moral philosophy offered here is roughly on target, it is a mistake to suppose that fitting Indian moral philosophy into consequentialist/non-consequentialist categories will have other than rather superficial results. Further, Indian philosophical perspectives do not much fit into a priority of the right, or priority of the good, or parity of the right and the good, classification. The relevant basic classification would appear to be between those views that embrace the priority of the (personalistic) good and those which favour the priority of the a-personal. In such ways as these, it is relevant and important to keep in mind the epistemological and metaphysical issues with which we began, and the doctrines over which these issues are joined. Only so will one understand and be able to assess the rich diversity of Indian moral philosophy.

Hume's definitions of cause

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Hume has put forward his definitions of cause first in his *Treatise* and later, after a lapse of nine years, in his *Enquiry*. These two versions suggest important reading. Even Hume's formulations of the definitions of cause in the *Treatise* raise a controversy between Robinson and Richards. The controversy chiefly centres round Hume's celebrated distinctions between philosophical and natural relations. The present paper will entail a discussion on (*i*) Hume's distinctions between two kinds of relations, (*ii*) Robinson-Richards controversy and (*iii*) whether the versions of cause in the *Enquiry* are essentially an unchanged formulation of the same in the *Treatise*.

Two Kinds of Relations: Hume's Distinctions

In the passage, in which Hume introduces his two definitions of cause in the *Treatise*, he writes:

> There may two definitions be given of this relation, which are only different by their presenting a different view of the same object, and making us consider it either as a philosophical or as a natural relation; either as a comparison of two ideas, or as an association between them.[1]

In Section V of Book I in the *Treatise* Hume elaborates upon the distinction between the two senses of the word 'relation'. In the first place, relation may be used to signify 'that quality by which two ideas are connected together in the imagination' by the natural force of association, so that 'the one naturally introduces the other'.[2] Hume calls these relations natural relations and lists three different varieties of them, viz. resemblance, contiguity in time or place and cause and effect. As distinguished from natural relations, Hume speaks of philosophical relations which arise out of comparison between ideas. In this second sense, ideas are connected not by virtue of association (as in the former case) but by the propensity of the mind to institute a comparison between them. Hume mentions seven different kinds of philosophical relations which are as follows: resemblance, identity, relations of time and place, proportions in quantity or number, degrees in any quality, contrariety and causation. A moment's reflection will reveal that these two lists of relations overlap, in a certain manner, inasmuch as all the three natural relations occur in Hume's list of philosophical relations as well. But this is not due to any oversight on Hume's part. In fact resemblance as a philosophical relation is very

different from resemblance as a natural relation. For example, a photograph naturally reminds us of the original because of the force of association of resemblance between them. But the idea of a stone does not immediately lead us to the idea of a table by the natural force of association. Apparently, there seems to be no connection between them. But when we compare them, the stone and the table, we find that they also resemble each other in being material. This resemblance is one of the philosophical relation of resemblance. This philosophical relation of resemblance is quite different from resemblance which is of natural relation. Although the stone and the table can be said to be philosophically related for being both pieces of matter, they cannot be said to be naturally related, since the mind does not convey from the appearance of the one to the idea of the other. Hence the similarity in name must not be confused with the similarity in nature.

Robinson-Richardson Controversy

In his 'Introduction' to *Hume's Enquiries*, Selby-Biggie confesses that Hume's distinction between philosophical and natural relations is for him 'very hard to follow' and 'indeed most bewildering'. Nevertheless a clear understanding of this distinction is vital because Hume's two definitions of cause depend on this celebrated distinction. The definitions of cause in the *Treatise* run as follows:

Def. 1: We may define a CAUSE to be 'An object precedent and contiguous to another, and where all the objects resembling the former are plac'd in like relations of precedency and contiguity to those objects, that resemble the latter.[3]

Def. 2: A CAUSE is an object precedent and contiguous to another, and so united with it, that the idea of the one determines the mind to form the idea of the other, and the impression of the one to form a more lively idea of the other.[4]

A little reflection will show that Def. 1 is the definition of the cause-effect relation as a philosophical relation, whereas Def. 2 is the definition of the same object as a natural relation. The former depends on comparison of ideas, while the latter on an association between ideas. According to Hume, these two definitions of cause 'are only different by their presenting a different view of the same object'.[5] Now, if the definitions of (1) and (2) are to be construed as 'views of the same object', then, Robinson[6] argues, (1) and (2) cannot both be regarded as definitions. His proposal is that (1) is to be regarded as a definition, while (2) is just an empirical psychological statement about (1). Robinson's contention is based on the consideration that there is a class of objects, of which (1) is true but (2) is not. Since the class of ordered pairs determined by (1) does not contain precisely the same members of ordered

pairs fixed by (2), Robinson concludes that Hume cannot mean without involving inconsistency that (1) and (2) both stand for definitions. Robinson goes on to show that not only (1) and (2) do not have the same extension, they do not also have the same meaning. Def. 1 'determines a class of ordered pairs (x, y) of particular occurrences, each pair having the completely objective property of being *an instance of a general uniformity*'.[7] If 'C (x, y)' be regarded as an abbreviation for the statement contained in Def. 1, then it may be said:...

> (a) the fact that C (x, y) in no way depends upon any one's having *observed* either x or y to have occurred; (b) even if x, or y, or both *are* observed by someone to occur, it would not be necessary *for him to be aware that* he had witnessed an instance of a general uniformity, in order that C (x, y); (c) the fact that c (x, y) depends on very much more than the circumstances immediately surrounding the particular occurrences x and y.[8]

If 'D(x, y)' be regarded as an abbreviation for the statement contained in Def. 2, it may then be stated:

> ...some human observer *has* observed either x, or y, or both to occur... and in either case that he now has the disposition to pass from the idea of an occurrence like x to an idea of occurrence like y, and to pass from an observation of an occurrence like x to an expectation of an occurrence like y.[9]

Since Hume's two definitions are equivalent neither intentionally nor extensionally, it seems strange to Robinson that Hume should put forward both (1) and (2) as *definitions* of the *same* term. Robinson's suggestion is that Def. (1) is Hume's definition of the cause-effect relation, while Def. 2 is not really a definition but simply an empirical psychological statement about that which has just been defined. He argues that analysing or defining a relation R is quite different from stating that a given relation *R* possesses a contingent empirical property. In fact, Hume's Def. 1 is an attempt at analysing or defining the causal relation, but Def. 2 does not analyse or define the relation at all. It simply states an empirical psychological theory involving it. Hence 'to say *of the cause-effect relation* that it is a natural relation *is not to define it, nor to contribute in any way to its philosophical analysis, but to presuppose that this has already been done*'.[10] In fact, Robinson thinks that it is not proper to classify relations into two kinds, philosophical and natural. All relations, according to his analysis, are philosophical and so to regard a relation as philosophical is to make factually an empty statement. As Robinson says:... the cause-effect relation, being a relation, is *ipso facto* a philosophical relation, and therefore to define it "as" a philosophical relation is, simply, to define it.'[11] Robinson also offers us a possible explanation why Def. (2) has been

put forward by Hume alongside (1). Hume realized, according to Robinson, that the omission of necessity in Def. 1 would be shocking to many who wish it to be included in the definition of cause. This consideration prompted Hume to offer in (2) a 'compromise' characterization of the cause-effect relation.

Robinson's interpretation of Hume's two definitions of cause is not acceptable. T. J. Richards very ably shows that Robinson's account is not a true account of Hume's intentions. He spares no pains to bring out that Robinson's argument does not follow from either what Hume says on relations or what Robinson thinks Hume says about relations. Hume's two definitions of cause are *alternatives*, a fact which is evident from his stressed and repeated use of 'either-or' in the passage in which Hume introduces his two definitions. To quote Hume:

> There may two definitions be given of this relation, which are only different by their presenting a different view of the same object, and making us consider it *either* as a philosophical *or* as a natural relation; *either* as a comparison of two ideas, or as an association betwixt them.[12]

Robinson tries to make light of this alternation. 'Hume wasn't *that* bad on his Logic or English'[13] as to make a fuss of these alternatives and to regard the second definition simply as an empirical comment on the objects satisfying the first. That (1) and (2) are both definitions will be evident from Hume's further remarks that to define a cause as (1) is to conceive easily that 'there is no absolute nor metaphysical necessity'.[14] If, on the other hand, we define a cause to be (2) 'we shall make still less difficulty of assenting to this opinion'.[15] Richards shows further that Robinson's conclusion does not follow from his own argument. In favour of his conclusion that (2) is not a definition but simply an empirical psychological statement about (1), Robinson refers to Hume's talk and admission of 'secret' and 'concealed' causes.

> But for Robinson to admit that Hume took cognizance of such causes, and to use this as evidence against the view that the two definitions are defining the same set of objects, is inconsistent with Robinson's own positive thesis that (2) is an empirical comment on the objects defined by (1).[16]

Since, as Robinson observes earlier, (2) is not true of all objects defined by (1), it follows from Robinson's own argument that (2) is, on Hume's view, a false empirical comment on (1). If, on the contrary, (2) does not involve a false statement about (1), then the conclusion of Robinson's position is that Hume is inconsistently asserting both that (2) is true of all objects satisfying (1) and that there are some objects which satisfy (1) but not (2). Richards shows further that it does not follow from Robinson's exposition of the two types of relations that (2) is seen not to be a definition. Even a causal inspection of Hume's views on relations will show that all the three natural relations are

included in the list of seven philosophical relations. It is, therefore, pertinent to ask: what is the relation between philosophical and natural relations of the same name? According to Robinson's analysis, Hume is, as it were, holding that all relations are by definition philosophical; but some of these are natural as they produce an association of ideas. What Robinson forgets is that there must be statable differences among the three types of natural relations. Consequently, as Richards rightly suggests, 'there can be given a definition of "cause" as a natural relation: a definition that sorts out natural causal relations from other natural relations'.[17] Moreover, Robinson's exposition of natural relation tends to suggest that if causality is a natural relation, all causal relations are natural. But it should be borne in mind that Hume nowhere argues that all causal relations are natural. Indeed, we have tried to observe earlier that there is a statable difference between natural relation and philosophical relation of the same name. For example, resemblance as a philosophical relation is very different from that as a natural relation. We can compare one material thing with another, for they resemble each other in being material. But from this it does not follow that every resemblance must produce an association of ideas, and that the idea of a material thing as such must lead the mind to another by the force of association. Similarly, causation as a natural relation is entirely different from that as a philosophical relation. The identity of names must not mean their identity in nature. However, a careful examination of Hume's two definitions of cause will rather reveal that Hume is seriously doing what he says he is doing, namely, defining the 'cause' both as a philosophical relation and as a natural relation. The definition of the philosophical relation 'cause' includes reference to (*i*) contiguity (*ii*) temporal priority and (*iii*) constant conjunction. The definition of the natural relation 'cause' involves (*i*) contiguity, (*ii*) temporal priority and (*iii*) a belief in or expectation of continued priority and contiguity. In other words, a natural cause-effect relation, as distinct from other natural relations (even philosophical cause-effect relation), entails that a cause is prior and contiguous to an effect in such a way as to lead to association of ideas between them. This Hume expresses by the phrase 'and so united with it that' in Def. 2. This phrase is not understandable on Robinson's explanation. It is true that Def. 2 does refer to an empirical psychological matter as regards this 'way' which leads to association. But Hume does not take up the investigation of this empirical psychological side issue. What he is doing in Def. 2 is just to offer another strict definition of 'cause'.

Let us look to the two definitions from a different angle. When, for example, we make an assertion that A causes B, we can very well ask: (*a*) what is being asserted? and (*b*) what states of affairs must obtain for the asserter to believe that A causes B? The two questions are not surely identical for the following reasons. An answer to the first question will involve, according to Hume, the conjunction of three things, namely, (*i*) contiguity or proximity between A and B, (*ii*) temporal priority of A over B and (*iii*) the constant con-

junction between *A* and *B* (i.e. to say, if *A* is present *B* is also present, and if *A* is absent *B* is also absent). These three constitute Hume's Def. 1. But an answer to the second question, on Hume's view, will involve (*i*) contiguity of *A* and *B*, (*ii*) temporal priority of *A* over *B* and (*iii*) the belief that whenever there is *A* there is *B*. This belief is arising out of invariably contiguous and precedent relation of *A* over *B* without exception. These three constitute Hume's Def. 2. Now it is obvious from the above analysis that object-pairs which obey (*i*), (*ii*) and (*iii*) have the relation "philosophical cause" existing between them'.[18] But 'object pairs obeying (*i*), (*ii*) and so related as to give rise to the belief that (*iii*) is true of them, have the relation "natural cause" existing between them'.[19] Since Def. 2 does tell us what we mean by a natural cause, (2) is not an empirical assertion which is either false of inconsistent with the rest of what Hume says. In short, (2) is just a definition as (1) is.

Definition of Cause in *Enquiry* and *Treatise*

Let us now consider Robinson's claim[20] that we have in the *Enquiry* an essentially unchanged formulations of the two definitions of cause from those presented in the *Treatise*. Here, in the *Enquiry*, Hume introduces the definition with the words 'suitably to this experience'. This brings welcome relief as it omits the distinction between the philosophical and the natural relation—a distinction which, we have seen, is the source of much confusion and misleading interpretation. The experiences, in the light of which definitions of cause, are given exhaust in two circumstances—repeated conjunction between two events and the customary transition from the observed to the unobserved. Suitably to these two types of experience, Hume offers his two definitions of cause. The important point to note here is that the first of these two definitions is stated in two formulations which Hume claims to be equivalent.

Def. 1 : A cause is 'an object followed by another, and where all the objects, similar to the first, are followed by objects similar to the second'.[21]

Def. 1a: A cause is an object followed by another and 'where, if the first object had not been, the second never had existed'.[22]

Def. 2 : A cause is 'an object followed by another, and whose appearance always conveys the thought to that other'.[23]

Before setting out to ascertain whether Def. 1 and Def. 1a are equivalent, it is worth while to note that there is no explicit or implicit reference to contiguity in space or time in Hume's definitions of cause in the *Enquiry*. This feature constitutes an essential part in Hume's definitions of cause in the *Treatise*. Mention is made here only of temporal priority which is implicit in the expressions 'first' and 'second' and 'following' of the second from the first. Now, a close look into Def. 1 and Def. 1a will at once suggest that these

are not equivalent. The clause in Def. 1 refers to constant conjunction, while the clause in Def. 1a is very different. It involves subjunctive conditional. Flew[24] seems to be right in maintaining that the subjunctive conditional clause, involved in Hume's Def. 1a, cannot be taken as equivalent to the conjunctive proposition occurring in Hume's Def. 1. But we cannot agree with Flew that the clause in Def. 1—'where all the objects similar to the first are followed by objects similar to the second'—indicates plurality of objects, whereas the clause in Def. 1a—'where if the first object had not been, the second never had existed'—is in the singular. The expressions 'first' and 'second' in Def. 1a can be taken to represent first set of objects and second set of objects respectively. Our interpretation seems to be well in accord with Hume's intentions. Nevertheless we agree with Flew that Hume is wrong in thinking Def. 1a as equivalent to Def. 1. For us, Hume in Def. 1 takes note of positive instances by virtue of which cause-effect relation can be ascertained. Here he anticipates Mill's Method of Agreement. In Def. 1a, on the other hand, Hume strengthens his definition of cause by considering the negative instances as well. Here he anticipates Mill's Joint Method of Agreement in Presence and in Absence. Now, as positive instances differ in important respects from negative instances, Def. 1 which is based on the positive instances cannot be taken as equivalent to Def. 1a which is concerned with negative instances. Another point to note in connection with Hume's Def. 1 is that the word 'all' in 'all the objects similar to the first, etc'. is not to be interpretated as meaning strict universality. Here 'all' certainly represents 'all known cases'; otherwise, the definition would not have any application at all. Indeed, there is a logical gap between 'All known A's are B's' and 'All A's are B's'—between the restricted and the unrestricted generalizations. In a similar way, there remains a logical gap between the statements of mere constant conjunction (Def. 1) and statements entailing subjunctive conditionals (Def. 1a). Any attempt to bridge this gap by allowing the words 'all' to mean strict universality is contrary to Hume's spirit. Be it noted here that the Naiyāyikas also speak of *anvaya* and *vyatireka* as the requisite steps of establishing a causal relation between two objects. It may be remarked here that Hume's Def. 1 and Def. 1a correspond to *anvaya* and *vyatireka* respectively, while his Def. 2 is analogous to the *Nyāya* concept of *Vyabhicārādarśana*.[25]

From the foregoing analysis, it becomes apparent that Def. 1 and Def. 1a are not equivalent, but two separate definitions If this be true, we are justified in concluding that in the *Enquiry* we have three, and not two, definitions of cause. This remark also beings to light the fact that there is an essential difference between the formulations of the definitions of cause in the *Treatise* and in the *Enquiry*. To sum up: as regards the definitions of cause, the versions of the *Treatise* and the *Enquiry* differ in important respects. In the first place, we have, in fact three definitions of cause in the *Enquiry* as distinguished from the two definitions of it in the *Treatise*. The three definitions, of course, are not, however, explicitly formulated by Hume. Strictly adhering to our

experience of causation in two circumstances, he claims in the *Enquiry* that there are two definitions of cause. But nevertheless he offers two formulations of the first definition and claims that they are equivalent. We have already observed that the two formulations of the first definition are not equivalent at all but simply two separate definitions by themselves. Secondly, the definitions in the *Enquiry*, unlike those in the *Treatise*, do not contain any reference to contiguity in either space or time. Lastly, gone are the hesitations of the *Treatise* in the *Enquiry*. The celebrated distinction between the philosophical and the natural relation is dropped. Causation is no longer viewed 'either as a philosophical or as a natural relation; either as a comparison of two ideas or as an association betwixt them'.[26] It is considered only in the light of two distinct kinds of experience—'one, the experience of similar instances of events constantly conjoined with each other, the other our habit of mind which moves as'[27] from the appearance of a cause to the idea of the effect. It may be argued that we may interpret these experiences in accordance with philosophical and natural relations and that Hume has never been able to shake off this distinction seriously. But it is nevertheless true that Hume in his *Enquiry* does not introduce this distinction, perhaps anticipating that it will lead to endless confusions and misleading interpretations. Be that as it may, we beg to differ, in the face of above analysis, from Robinson's view that the two versions of cause in the *Treatise* and in the *Enquiry* are essentially unchanged.

Conclusion

In conclusion we like to submit that Hume always prefers a mixed kind of philosophy because it is based on the mixed character of human nature. Accurate and abstruse philosophy, in spite of its difficulties, is surely to be cultivated. But for that reason we should not disregard the easy and obvious philosophy. Man is no doubt a reasonable being; but he is also a sociable and active being. So we must try to reconcile between the reasonable and the sociable, the contemplative and the active side of human character. One, in fact, supplements and makes up the defects of the other. This is perhaps the reason why Hume offers his two definitions of cause. This interpretation is quite in keeping with Hume's intention when he says: 'Be a philosopher, but amidst all our philosophy, be still a man'.[28]

Notes

1. L.A. Selby-Bigge (ed.), *A Treatise of Human Nature*, O.U.P., Clarendon Press edn, 1967, pp. 169-70.
2. *Ibid.*, p. 13.
3. *Ibid.*, p. 170.
4. *Ibid.*, p. 170.

5. *Ibid.*, p. 170.
6. *Vide*, J.A. Robinson 'Hume's Two Definitions of Cause' and 'Hume's Two Definitions of Cause Reconsidered, first published in *The Philosophical Quarterly* and later reprinted in V.C. Chappell (ed.), *Hume*, Macmillan, 1966.
7. J.A. Robinson, 'Hume's Two Definitions of Cause' in V.C. Chappell (ed.), *Hume*. Macmillan, 1966.
8. *Ibid.*, p. 131.
9. *Ibid.*, p. 132.
10. *Ibid.*, p. 137.
11. *Ibid.*, p. 138.
12. *Treatise*, pp. 169-70 (italics ours).
13. T.J. Richards, 'Hume's Two Definitions of Cause', by in V.C. Chappell (ed.), *Hume*, Macmillan, 1966; first published in *The Philosophical Quarterly*, vol. xv, 1965.
14. *Treatise*, p. 172.
15. *Ibid.*, p. 172.
16. See 'Hume's Two Definitions of Cause' in V.C. Chappell (ed.), *Hume*, Macmillan, 1966, p. 150.
17. *Ibid.*, p. 155.
18. *Ibid.*, p. 159.
19. *Ibid.*, p. 159.
20. See J.A. Robinson, 'Hume's Two Definitions of Cause' in V.C. Chappell (ed.), *Hume*, Macmillan, 1966, p. 133.
21. C.W. Hendel (ed.), *An Enquiry Concerning Human Understanding*, The Library of Liberal Arts, 1955, p. 87.
22. *Ibid.*, p. 87.
23. *Ibid.*, p. 87.
24. A. Flew, *Hume's Philosophy of Belief*, Routledge and Kegan Paul, 1966, pp. 130-31.
25. For an account of Nyaya view and its comparison with Hume's view, *see* T.K. Chakrabarti, *Hume's Theory of Causality*, Minerva Associates, 1979; pp. 106-07.
26. *Treatise*, p. 170.
27. Hendel, *Studies in the Philosophy of David Hume*, The Library of Liberal Arts, 1963, p. 175.
28. *Enquiry*, p. 18.

Plato's political thought: a critique of Popper's interpretation

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Karl Popper, in the first part of his book *The Open Society and Its Enemies*, has analysed and criticized Plato's moral and political thought very systematically and severely.[1] In his quite unique interpretation of some of the Platonic doctrines, Popper has several ideas to put forth and some very pertinent objections to make against Plato. He holds that one of the greatest dangers and the main obstruction in the progress of our civilization has been totalitarianism, a dangerous political programme of which Plato was the founding father. Plato's political philosophy is a reactionary movement which has tried and still tries to overthrow civilization and to return to tribalism. If it is so, it is not an ordinary mistake but one of the gravest which human civilization has seen. The time has come to correct the mistake, and Popper's *Open Society* is precisely an attempt to that end. The book primarily aims at freeing readers from the long and lingering spell of Plato.

It would involve us in a long discussion to respond to all of Popper's arguments. Perhaps someone may react to every piece of the argument of the book on both the counts: *what* has been said and the *way* it has been said. Here, in this paper we do not intend to undertake any such task. We shall rather concentrate on some of his major arguments.

Popper develops his strategy more or less by attempting to establish the thesis that Plato was a historicist, and hence whatever methodological difficulties and problems there are in historicism may be applied to Plato also. Historicism, according to Popper, is the fundamental impulse of Plato's entire philosophy, and is intimately connected with his naturalism which, too, can be rejected on sound theoretical grounds. Historicism and naturalism are further linked with Plato's theory of justice, which, in Popper's view, is a totalitarian theory of justice. Thus, at each stage, Plato's theory is attacked and then the theory is rejected finally.

All this calls for a systematic exposition of Popper's views and also for their critical examination. In attempting to do that in this paper we shall maintain:

(1) Popper's objection to Plato's approach towards social science on the ground of his commitment to historicism is baseless, for Plato was not a historicist at all.
(2) Plato's naturalism should be seen as rooted in his metaphysical or ontological premises, and hence it is here that Plato is to be attacked and not on the count that he rejected or ignored the fact-value distinction.

(3) It is true that Plato was an advocate of totalitarianism, but the way he expounded it is different from what Popper makes out of it. Popper may be right in holding the view that Plato advocated a closed society, but one should not forget that the reason for Plato's favouring it was to ensure *justice for all* in a political community.

Popper, in discussing the Socratic problem, argues that while making an assessment of Plato we are, in fact, always *interpreting* him.[2] Scholars like Burnet and Taylor have suggested that we should proceed with the assumption that Plato really meant what he said and that Plato's evidence is the only first-hand evidence available to us. According to this principle, Plato's Socrates must be accepted as a portrait of the historical Socrates. While conceding this to be a sound starting point, Popper goes on to show that there are facts which soon force everybody to give it up. They are the so-called contradictions in Plato's alleged portrait of Socrates. Even if we accept the principle that we have no better evidence than Plato's, we are forced by internal contradictions in his writings not to take him at his word, and to give up the assumption that he really meant what he said.

This point may well be applied to all the Platonic doctrines. If there are contradictions, then we are forced to interpret Plato. Therefore, to criticize Popper it will not be sufficient on our part just to show certain passages and theses in Plato's writings which may lead to results contrary to those that Popper has arrived at, because he may very well argue that the weight of the argument turns on those passages which he has quoted. So, mere citation of counter-passages will not cut the ground. What therefore is suggested is to consider the passages which have been cited by Popper himself and on which his interpretation is based, and then see whether his interpretation is the only possible one or some other interpretations may also be possible.

Let us start with the question of historicism. According to Popper, one is committed to historicism if one believes that a truly scientific or philosophical attitude towards politics and a deeper understanding of social life in general should be based upon contemplation and interpretation of human history, and that only by right contemplation and interpretation it is possible to trace a definite pattern in human history and work out historical laws by which future course of events may be predicted. But, as Popper suggests, this approach to social sciences gives poor results. In fact, any historical prophecy is beyond the scope of scientific method.

The first question to consider is whether Plato was a historicist at all. Popper writes: 'From the feeling that society, and indeed *everything*, was in flux, arose, I believe, the fundamental impulse of his philosophy....'[4] And Plato summed up his social experience by professing a law of historical development. 'According to this law...all social change is corruption or decay or degeneration.'[5] Popper suggests that Plato's theory of forms provides the speculative or metaphysical argument in favour of maintaining the thesis that

all change is corruption or decay, and Plato arrives at the same conclusion by a study of history as we find in at least three of his dialogues, namely, *Statesman*, *Timaeus* and *Laws*.

We may first take up the argument derived from the theory of forms Popper writes:

> The fact that this theory is designed to explain the similarities in sensible things does not seem at first sight to be in any way connected with historicism. But it is; and as Aristotle tells us it was just this connection which induced Plato to develop the Theory of Ideas.[6]

Since no reference is given by Popper, it is difficult for us to see how Aristotle connected Plato's theory of forms with his historicism. Popper thinks that for Plato forms are the starting points of all the changes in the world of flux. 'If the starting point of all change is perfect and good, then change can only be a movement that leads away from the perfect and good; it must be directed towards the imperfect and the evil, towards corruption.'[7]

To an ordinary reader this interpretation of Plato's theory of forms would seem somewhat strange, for he usually understands the theory as a synthesis of two theses which confronted Plato: the Parmenidean thesis that *reality is unchanging* and Heraclitean thesis that *everything is in flux*. One of the central ideas on which Plato constructed the edifice of his philosophy itself becomes the ground for proving historicism in Popper's hands. (Surely this is not an objection to Popper's view because most of the scholars may be wrong in their understanding of Plato.) Apart from this, however, what is objectionable in Popper's interpretation of the Platonic thesis that '*the more away a thing is* from its form, the less real, less true or less good it is' may be summed up in the following statement: Popper seems to think that being *more away from* means *later in time*, because it is only when interpreted this way that one may say that there is a constant degradation in things or that history is the history of decay in things.

But should Plato's views be understood in this way? In fact, Plato says that the more a thing resembles or participates in its idea, the more real it becomes. It is true that the notion of resemblance or participation itself does not carry any very precise meaning in Plato's thought. But there can be little doubt that the notion of *time* does not have any relevance in this context. To prove its relevance one will have to imagine Plato holding the following position: in the beginning of the universe, reality was more real or perfectly real; and it becomes more and more unreal as time marches on.

That it is a misrepresentation of Plato's view will become clear if we pay attention to the task undertaken by Plato in such dialogues as *The Republic* and *Laws*: the task of conceiving an ideal society and his proposed plan to realize the ideal. If we accept Popper, we shall have to admit that *Plato never meant what he really said.* If Popper were right in this interpretation, Plato

would never have spoken of the possibility of the emergence of an ideal state or of approximating the ideal condition, for time will always inevitably result in degeneration of things and the dream of ideal city will never be realized.

As usual, Popper anticipates the objection. (But that does not prove his position to be right because he does not actually meet the anticipated objection.) He finds it problematic to explain how Plato could speak of a programme for making of an ideal state when he accepted the law of social decay. He admits that Plato 'certainly believed that it is *possible* for us, by a human or rather by a superhuman effort, to break through the fatal historical trend, and to put an end to the process of decay'.[8] Popper's solution is that it should be treated as historicism with some limitations.[9]

But it is not possible to reconcile these two views as they are contradictory. One who believes that man's destiny can be changed by free will can never be said to believe in determinism. Therefore, it is not historicism with some limitations as Popper suggests but no historicism at all.

Popper's second argument in favour of considering Plato as a historicist is that Plato's study of history also led him to the same conclusion. In favour of this thesis, Popper alludes to some passages in the *Statesman, Laws* and *Timaeus.*

Popper writes:

> According to one of Plato's dialogues (the *Statesman*), a Golden Age, the age of Cronos...is followed by our own age, the age of Zeus, an age in which the world is abandoned by the gods and left to its own resources, and which consequently is one of increasing corruption.[10]

He further says: 'It is not certain how far Plato believed in the story of the *Statesman.* He made it quite clear that he did not believe that all of it was literally true.'[11] But in spite of this Popper writes:

> On the other hand, there can be little doubt that he visualised human history in a cosmic setting; that he believed his own age to be one of deep depravity...and the whole preceding historical period to be governed by an inherent tendency towards decay...[12]

And he states again:

> ...in the *Statesman* the six forms of government are ordered according to their degree of imperfection...the six forms which are all degenerate copies of the perfect or best state, appear all as steps in the process of degeneration.[13]

The passages referred to are 297 *c* and 303 *b* of the *Statesman.*[14] But these passages hardly show any intent on the part of Plato that he was attempting a *historical* account of the degeneration of states. The whole discussion seems to be a conceptual analysis of various actual or possible forms of government rather than a historical one. This is a recurring theme in Plato's writings; it also appears in *Laws*, where he arrives at the conclusion that monarchy and democracy are the two main types of government, all the rest being variations or combinations of these two types.

Popper then refers to the theory of origin of species in *Timaeus.* 'According to this story, man, the highest of animals, is generated by the gods; the other species originate from him by a process of corruption...'.[15] It is clear, writes Popper, 'that this theory can be applied to human society, and to its history.'[16] But Popper does not offer any further evidence to show how this can be done. The story only tries to show how various species came into existence. It does not show in particular that lower species are gradually coming into existence or that there is a constant degradation of species or that history is a history of degeneration.

Popper further alludes to some references in *Laws* where a discussion is undertaken regarding various forms of government. Popper maintains that a historical survey is explicitly undertaken there. To prove this thesis, Popper goes up to the extent of misquoting the text. One of the passages referred to by him runs as follows: 'Have not uncounted thousands of cities been born during this time...and has not each of them been under all kinds of government? ...Let us, if we can, get hold of the cause of so much change.'[17] Taylor's translation of the passage reads : 'And you will surely grant that thousands and thousands of cities have come into being during this time, and no less a number have ceased to exist? Moreover, every form of constitution has repeatedly appeared in one or other of them. *Sometimes a small city has grown larger, sometimes a large city smaller; a bad city has sometimes grown better, a good city sometimes worse....* Thus we have, if possible, to discover the cause of these variations...'[18] (emphasis mine). It is clear that the underlined portion was deliberately left out by Popper while citing the passage, for had he done so, it would have clearly shown that Plato did not believe in a constant decay in history.

Therefore, as far as the textual study goes, we do not find Plato believing in any historical law of decay. Moreover, it is hard to believe that Plato had any historical records before him to work out any theory of history. One need not speculate on this point. In *Laws* he has explicitly stated that 'our survey of history also has led us to the same result which we had previously arrived at'.[19] It implies that Plato arrived at his conclusions independently on *a priori* grounds and that they were at most substantiated by history. This will become clear if we ask ourselves the question: what would Plato have done had the results of history been altogether different? Would he have abandoned his theory or altered his conclusions? Further, if history was so important to him, why did he not introduce it in the curriculum at his academy?

Popper, of course, admits that Plato probably did not possess the necessary data, but he suggests that he tried to reconstruct the ancient tribal form of social life as he wanted to show how free it was from disunion and how class war had been avoided in it.[20] But in the ancient tribal state, as depicted by Plato (even if we allow it to be a historical fact and not a myth), there was no class war to be avoided. It is true that Plato believed the older form of tribal social life to be peaceful and free from many vices which went along with more civilized life. But he did not consider it the truly ideal form of life for the simple reason that there was no true knowledge or philosophy available in it. The simple tribal life was devoid of vices but knowledge of virtue had hardly anything to do with its making. Its formation was the result of other factors: the specific geographical and economic conditions in which the tribals lived and their lack of technology. To think that Plato conceived the tribal form of life as idea which had somehow to be revived and then preserved for ever is to forget the central role that philosophy played in his notion of good life or the role that philosopher was allowed to play in the ideal state he conceived of. One might perhaps rightly conclude that neither Plato's sociological or historical investigations could lead him to any historical law of decaying things; nor his theory of ideas could be treated as leading to historicism.

To treat Plato as a totalitarian one need not go *via* historicism. A thinker may be committed to historicism. He may believe that progress is inevitable in history, and that the perfect form of society would be some sort of democracy; one may not believe in historicism, and yet maintain that totalitarianism is the only possible remedy for the vices of social life.

We may now proceed to an analysis of Popper's next thesis which seeks to establish Plato as a naturalist.

According to Popper, naturalism is a tendency or a belief which states that, in spite of the fact that there is a distinction between nature and convention and between natural and normative laws, there are some eternal unchanging laws of nature from which one can derive ethical or normative laws. In Popper's view, Plato derived the norm that men ought to be treated unequal from his belief that they were so by nature. Plato thought that social life began with natural inequality between persons and it could, therefore, continue upon that foundation only. He also thought that man's true natural aims could be derived from his own true nature which is spiritual and social., and further that natural norms of social life could be derived from man's natural ends. This spiritual naturalism was used by Plato to justify natural prerogatives of the *noble* or *elect* or *wise* or of the *natural leader*.

One can see that the problem arises right at the very foundations—the way Plato conceived reality as manifesting ontological as well as axiological principles. If a thing is real only to the extent it participates in its idea which is also its ideal or, to put it conversely, if reality itself is ideal towards which

all sensible things strive so as to become more real, then the fact-value distinction becomes irrelevant.

In accordance with this view, one may account for or provide reasons to think why Plato believed that inequality should continue in social life or why he considered it to be just. In conformity with his theory of forms, Plato maintained that men participated more or less in the idea of manhood and were, therefore, more or less human. In the very statement that men were unequal, it was not a mere fact that was being stated but a norm which was being employed indicating what a man ought to be and with reference to which men were unequal. While asking what man's true nature was so as to derive norms for his conduct, Plato was seeking for the essence of man, and was thus, in fact, employing a valuational notion about what a man ought to be. In his scheme, it is pointless to argue that since man's nature was spiritual he ought to behave in a manner so as to acquire his true nature; it must rather be said that man is man to the extent he participates in his ideal or his spiritual nature. And, therefore, one can say that Plato did not derive an *ought* from an *is*; rather he dropped this distinction.

In no way is this argument a defence of Plato. What we are suggesting is that if Plato is to be criticized for this, his entire theoretical framework has to be challenged. This will be true for all of his important doctrines including the political ones.

The final argument of Popper against Plato is that he is a totalitarian, an advocate of closed society and a conscious enemy of liberal ideas. According to Popper, the principal elements of Plato's political thought are as follows:

(*A*) The strict division of the classes, i.e. the ruling class consisting of herdsmen and watch-dogs must be strictly separated from the human cattle.

(*B*) The identification of the fate of the state with that of the *ruling class*; the exclusive interest in this class, and in its unity; and subservient to this unity, the rigid rules for breeding and educating this class, and the strict supervision and collectivization of the interests of its mem bers (emphasis mine).

From these principal elements others can be derived; for instance, the following:

(*C*) The ruling class has a monopoly of things like military virtues and training, and of the right to carry arms and to receive education of any kind; but it is excluded from any participation in economic activities, especially from earning money.

(*D*) There must be a censorship of all intellectual activities of the ruling class, and a continual propaganda aimed at moulding and unifying their minds. All innovation in education, legislation, and religion must be prevented or suppressed.

(*E*) The state must be self-sufficient. It must aim at economic autarchy;

> for otherwise the rulers would either be dependent upon traders, or become traders themselves. The first of these alternatives would undermine their power, the second their unity and the stability of the state.[21]

This programme, Popper says, can be fairly considered totalitarian. Plato identified justice with the principle of class rule and of class privilege. For him justice was not a relationship between individuals but a property of the whole state based upon a relationship between its classes. 'The state is just if it is healthy, strong, united, stable.'[22]

For Plato, Popper thinks, only one ultimate standard remained and that was the interest of the state. Everything that furthered it was good and virtuous and just, and everything that threatened it was bad, wicked and unjust. Plato's moral code was strictly political utilitarianism. Morality was nothing but political hygiene.[23]

That Plato was interested in protecting the interests of a particular class is a criticism that has been well responded to not only by Plato's defenders but also by some of his critics. Moreover, Popper himself, in the concluding chapter of The Open Society, finally agrees that Plato was perhaps interested in the *good* of the entire society. Why did Popper modify his initial position? As has been well pointed out by his critics, in the *Republic* we do not find *strict* division of classes, for nowhere does Plato discard the possibility of a soldier becoming a guardian or a guardian's degradation to the class of a soldier. Moreover, such a modification becomes necessary if Plato's second major political treatise, i.e., *Laws* is taken into account. And surely this dialogue cannot be ignored or set aside as unimportant, particularly by Popper, who himself frequently draws attention to the dialogue in support of his own interpretation. For example, to prove that Plato is an anti-humanitarian Popper often refers to passages from *Laws*. But the dialogue also contains other points of interest. For example, in *Laws* we do not find a division of classes in the form of military class and unarmed class; rather the distinction is drawn between citizens and non-citizens. Any citizen may occupy important offices of the state, including the highest office. There is no separate guardian class that alone is entitled to rule. If, in place of the phrase *ruling class*, (in the passage cited above p. 83) *all the citizens* is substituted, it makes an important difference. In that case, the conclusion follows that Plato's programme is not designed only for the benefit of the ruling class or that state's interests are not identified by him with those of a particular class only. That Plato might have totally misconceived what is to one's interest or benefit and how it may be attained is a separate issue.

Popper has suggested that by formulating the key problem of politics as *who should rule*? Plato has created a lasting confusion in political philosophy. Once the question is formulated in this way, it is hard to avoid some such reply as *the best* or *the wisest*. With this answer the future problem will be of

selecting and educating persons to rule and designing institutions for the selection of future leaders. As Popper suggests, the very idea of selecting or educating future leaders is self-contradictory; for the secret of intellectual excellence is the spirit of criticism, independence of thought. Institutions for the selection of the outstanding can hardly be devised. This criticism made by Popper justifiably strikes at the root of the concept of education as understood by Plato. It may be added that the problem has a deeper dimension, for the question *who should rule*? presupposes one's conception regarding *statesmanship* itself. If one propounds the thesis that it is a matter of expertise, a science, the object of which is to acquire spiritual health for its citizens, then the answer is inevitable that the ruler ought to be an expert or knower of science, a wise man, a philosopher. It would follow by definition that he who knows the art of ruling should rule. Plato argues that just as navigation requires a skilled navigator, treatment of a diseased person a physician, so the treatment of spiritual illness requires a philosopher who knows the correct treatment of the souls. Of course, Plato also assumes that there is something called *spiritual health* which can be defined precisely or definitively; society is diseased and, therefore, needs a healer or saviour.

However, the assumption that statesmanship is a science is itself questionable. It is a mistake to hold that it has well-defined aims to achieve and specific methods to achieve the aims defined. For Plato there are correct standards in fine arts and morality; similarly, there is some correct view of political justice also. And if someone disagrees with that correct notion of political justice, he is irrational for the same reasons as those which we have when we find one disagreeing about a factual question, though sufficient evidence has been provided to him to accept that fact. That *there can be alternative rational approaches to the concept of social justice* is a view which will be rejected by Plato outright.

We think that, in the field of politics, only this much can be said and agreed upon that statesmanship aims at the good of the entire community. But disagreements start when one proceeds to entertain the question: what does the good of the community consist in ? Which political institutions will be able to achieve it ? And, surely, these disagreements may be firmly grounded on reason. I presume that Plato denies the very possibility of alternative rational standpoints about matters of serious concern for human beings. Plato is a totalitarian in holding the view that there is something called *the good* which can be known only by a *select few*. His idea of the rule of Philosopher-king in the *Republic* and an unchangeable legal code in *Laws* suggests that Plato thought of himself as among those few select beings.

To hold the view that there cannot be alternative rational standpoints about values is, in fact, to commit oneself to an essentialist point of view which is questionable in itself. That apart, there is also an epistemological difficulty of a fundamental kind. In Plato's thought, *reason* that comprehends ideas is more or less *intuitive reason*, rather than just reason itself.

Knowledge of ideas is *intuitive knowledge* and, therefore, its validity cannot be ascertained or judged by any rational means. Also, it can neither be proved nor disproved that someone actually has the knowledge of *beauty* or *justice*. Since there cannot be any rational criteria to *know* whether someone knows (in Platonic sense), knowledge has to be *assumed*.

All this would become more apparent if we draw our attention to the fact that nowhere does Plato provide any concrete definition of justice or good (although while criticizing an opponent's thesis Plato usually demands a concrete definition as 'justice is the interest of the stronger'). Even if one considers 'justice is to mind one's own business' as a definition of justice, it is empty because it remains to be settled what one's business is and who can decide it and by what criteria. Plato never presented, as rightly pointed out by Popper, any *arguments* in favour of establishing his peculiar notion of justice. Plato writes (in '*The Republic*') since all the three virtues of the state have been examined, the remaining fourth, that of minding one's own business must be *justice*. Even a defender of Plato would not like to treat it as a sound theoretical argument.

Plato's whole spectrum of political thought, I suppose, rests on his notion of human personality and on the assumption that politics is a science. Both these elements combined together, perhaps, may explain some of the important political views of Plato. We have already discussed some of the problems inherent in the assumption that politics is a science. The other aspect, i.e. Plato's notion of human personality, is much more problematic to deal with since it involves the fundamental question of one's value conception regarding ideal human life as such. For Plato, the ideal life is a *life governed by reason*; all other values of social life are subservient to it. That is Plato's ultimate principle. One may reject it, but one has to see what such a rejection involves. Does the rejection or acceptance of any particular value scheme in favour of another depend upon logical grounds or cognitive considerations? If it is not so, then one can only say that Plato's conception of ideal human life is different from that of our own. The difference lies in our choices. Such a choice may be supported by *good* reasons, but then they are not *conclusive* reasons.

Plato's deep concern for the achievement of an ideal human life led him to adopt an authoritarian view in politics. He did not find anything objectionable in the thesis that an intelligent person should govern the community with his own view about what is good and beneficial for the masses; it is justifiable and desirable as much as it is right that reason should govern passions. But Plato could not see that reason can never be a property of an individual and that the search for truth never ends with one individual's thought process. Belief in one's own reason and no one else's is a belief which is too objectionable to hold. Such a view is so conspicuously present in all the major political dialogues of Plato—whether it is the idea of the Philosopher-King in the *Republic* wherein future philosophers are *trained* in the literal sense of the term or the statesman of the *Statesman* who is a saviour or healer of a diseased

society or a herdsman of the human flock or the legislator of *Laws* who would not let an individual do any activity without proper instructions of a leader—that one wonders whether it is a disciple of Socrates who is addressing his readers. One really finds in the dialogues that Plato the idealist philosopher is gradually submerged by Plato the advocate of totalitarianism. But it must also be conceded that Plato's totalitarianism is highly intellectualized which finds its expression only in the field of politics.

The fact remains that the social structure so strongly condemned by Plato made the rise of a philosopher like him possible. But in the Platonic ideal society the emergence of a philosopher like Plato can hardly be imagined. And herein lies the basic paradox of Plato's philosophy.

Notes and References

1. K.R. Popper, *The Open Society and Its Enemies*, vol. i, London: Routledge & Kegan Paul Ltd. 1952.
2. *Ibid.*, pp. 306-08.
3. Renford Bambrough has suggested in his article 'The Disunity of Plato's Thought' (*Philosophy*, vol. 47, Oct. 1972) that Platonic scholars tend to be preoccupied less with the question about what Plato said than with the question about methods of interpreting Plato.
4. Popper, p. 19.
5. *Ibid.*
6. *Ibid.*, p. 28.
7. *Ibid.*, p. 36.
8. *Ibid.*, p. 20.
9. *Ibid.*, p. 21.
10. *Ibid.*, p. 19.
11. *Ibid.*, p. 20.
12. *Ibid.*
13. *Ibid.*, p. 209.
14. Plato writes in *Statesman*, 303 a-b:
'(A)s for the rule of a few, just as the few constitute a middle term between the one and the many, so we must regard the rule of the few as of middle potency for good or ill. The rule of the many is weakest in every way; it is not capable of any real good or of any serious evil as compared with the other two. This is because in a democracy sovereignty has been divided out in small portions among a large number of rulers. If therefore all three constitutions are law-abiding, democracy is the worst of the three, but if all three flout the laws, democracy is the best of them. Thus if all constitutions are unprincipled the best thing to do is to live in a democracy. But when constitutions are lawful and ordered, democracy is the least desirable, and monarchy, the first of the six, is by far the best to live under.' See Edith Hamilton and Huntington Cairns (ed)., J.B. Skemp (tr.), *The Collected Dialogues of Plato*, Princeton: Princeton University Press, 1980, pp. 1073-74.
15. Popper, p. 37.
16. *Ibid.*
17. *Ibid.*, p. 44.

18. Plato, *Laws* 676 C, (see F.N. 24).
19. *Ibid.*, 684 a.
20. Popper, p. 46.
21. *Ibid.*, pp. 86-87.
22. *Ibid.*, p. 90.
23. *Ibid.*, p. 107.

In defence of quantum logic

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I. Introduction

Quantum theory, which is regarded as one of the most important developments in the history of science, has been in need of a satisfactory interpretation since the theory was first formulated. To meet the need, several interpretations have come to the surface, of which the most influential one is known as the Copenhagen interpretation.

Birkoff and von Neumann [Birkoff and von Neumann, 1936], inspired by the Copenhagen view, have offered an interpretation by discovering the logic of the experimental propositions of quantum mechanics, which is different from classical logic, and is formally indistinguishable from the calculus of the linear subspaces of Hilbert space. This view has been reinterpretated by Fikelstein more operationalistically in his Pittsburgh lecture [Finkelstein, 1972].

From this Putnam takes his lead and asserts that the logical form of the world is non-classical, and so we need to revise our logic[1] [Putnam, 1975].

He argues that while

(1) $P_0 \cdot (V_0 \vee V_1 \vee \ldots \vee V_n \vee \ldots)$

is true according to quantum theory

(2) $(P_0 \cdot V_0) \vee (P_0 \cdot V_1) \vee \ldots \vee (P_0 \cdot V_n)$

must be false. Therefore, according to classical method of evaluation, (1) $\supset$ (2) must be false. Hence the necessity of revising classical logic, and that amounts to dropping the principle of distribution:

(3) $(A \cdot (B \vee C)) \supset ((A \cdot B) \vee (A \cdot C))$

II. Objections to Quantum Logic

II.1. *Harrison*

In a recent paper Harrison [Harrison, 1983] objects to such a revision. He maintains that Putnam's contention about (1) is false. The reason is: we can hold (1) to be true only when both of its conjuncts are true. But we can assert the second conjunct of (1) to be true, given that the first is, only if we take for granted that the propositions 'that the particle has velocity V_0', 'that the particle has velocity V_1', etc., are all the possibly true propositions. But that is false,

according to quantum theory. Though V_0, V_1, etc., are all the possible velocities, the propositions asserting that the particle has this or that velocity do not exhaust the possibilities, because the additional possibility is that the particle does not have any of the velocities above. Therefore, we cannot hold the second conjunct of (1) to be true. From this he concludes:

> Either the second conjunct of (1) is logically true or it is not. If it is logically true quantum theory must be false, so there is no need to revise classical logic to accommodate it. On the other hand if it is not logically true, there is no reason why it should not be false in the event of quantum theory's being true and so (1) and (2) be both false in the same circumstances. Hence quantum theory provides no reason for rejecting principle of distribution and there is not this need of quantum logic [Harrison, 1983].

II.2. *Hooker*

In his long article, Hooker [Hooker, 1973] describes this approach (the logical interpretation of Hilbert space and so directed more against Bub [Bub, 1974] than Putnam) to be a failure, though an elegant one. In his opinion, the approach to bring coherence between the conceptual-logical and mathematical structure forces upon us a conceptually unbelievable ontology. In fact, he claims that there is no ontology at all:

> Although through parasitism upon the atomic ontology of CPM, one is inclined to suppose that one can conceive of particles that have position and do not have momentum one moment (and place), have momentum but do not have position next (at no place), more careful thought leads to the conclusion that no notion of an individual is constructible [Hooker, 1973: 266].

It is interesting to note that Hooker accuses Putnam and Bub of doing exactly the opposite of what Harrison claims they have done. He arrives at his position from somewhat formal considerations, and we shall presently explore them.

As usual he starts by considering propositions of the form as in the following:

> The value of the observable θ lies in $E(\subseteq R)$, E being a Borel subset of the real line R.

Observables are construed as real-valued functions on the phase space. Such a proposition expresses a property (θ lying in E) of a classical particle mechanical system, call it $P^{\text{CPM}}_{\theta,\,E}$. These will form a Boolean algebra, call it $\mathscr{B}^{\text{CPM}}_{\theta}$. But every $P^{\text{CPM}}_{\theta,\,E}$ selects a Borel subset $\theta^{-1}(E)$ of phase space S^{6N} of an N-component system:

$$\theta^{-1}(E)=\{\langle q,p\rangle:\theta(\langle q,p\rangle)\in E\}$$

where $\langle q,p\rangle$ are points of phase space. So there is a correspondence between such propositions and a subfield of the field of subsets of S^{6N}. Hence there is a one-one correspondence between $\mathscr{B}^{\text{CPM}}_{\theta}$ and $\mathscr{B}^{\text{CPM}}_{s}$, the Boolean Algebra of subsets of S^{6N}. But the singleton set $\{\langle q,p\rangle\}$ is an atom in $\mathscr{B}^{\text{CPM}}_{s}$ and so $\langle q,p\rangle$ determines, by theory of Boolean Algebra, ultrafilters[2] on the Boolean Algebras $\mathscr{B}^{\text{CPM}}_{\theta}$, $\mathscr{B}^{\text{CPM}}_{\theta'}$, etc. The atoms of $\mathscr{B}^{\text{CPM}}_{\theta}$ are the propositions $P^{\text{CPM}}_{\theta,\{r\}}$, $\{r\}$ being a singleton subset of R. So a definite value on R is determined.

For a joint assertion of some n observables θ, θ', etc., we need to consider the product of n such Boolean Algebras. The product of all such algebras would also form a Boolean Algebra, call it $\mathscr{B}^{\text{CPM}}_{\theta}$, and an atom of $\mathscr{B}^{\text{CPM}}_{\theta}$ would be the conjunction of the atoms of the respective Boolean algebras. Then the $\langle q,p\rangle$ would determine ultrafilters on $\mathscr{B}^{\text{CPM}}_{\theta}$ and would be isomorphic to $\mathscr{B}^{\text{CPM}}_{s}$.

Now consider the characteristic observables for the set. It has the value 1 iff the location of the system is in S'. So any proposition of the form $P^{\text{CPM}}_{C_S',\{1\}}$ would correspond to S' and the Boolean algebra of these propositions would again be isomorphic to $\mathscr{B}^{\text{CPM}}_{\theta}$.

Then every magnitude can be thought of as a collection of properties; and since every property corresponds to a characteristic observable, every magnitude may be expressed in terms of the demand so that the collection of properties has the structure of a Boolean algebra. This is the sense of saying that the logic of the classical mechanical system is Boolean, and it represents the way properties of the classical mechanical system hang together.

In quantum mechanics also one may start by considering the propositions of the form as given below:

The value of the observable θ lies in $E(\subseteq R)$ denoted by $P^{\text{QM}}_{\theta,\,E}$. Here also E is a Borel set, R is the real line. In quantum theory there is a special type of operators corresponding to the characteristic observables of classical mechanics. These are the projection operators I_θ, the idempotents of the theory and represent the properties of the system. These are in one-one correspondence with the subspaces of the Hilbert space associated with the system. Denote the subspace corresponding to I_θ by $h(I_\theta)$ and the propositions by $P^{\text{QM}}_{h(I_\theta),\{1\}}$. On the basis of this correspondence logical connectives can be defined in the following way:

$$P^{QM}_{h(I_\theta),\{1\}} \vee P^{QM}_{h(I_{\theta'}),\{1\}} = df\ P^{QM}_{h(I_\theta)} \dot{\cup} h(I_{\theta'}),\{1\}$$

$$P^{QM}_{h(I_\theta),\{1\}} \wedge P^{QM}_{h(I_{\theta'}),\{1\}} = df P^{QM}_{h(I_\theta)} \cap h(I_{\theta'}),\{1\}$$

$$\neg P^{QM}_{h(I_\theta),\{1\}} = df P^{QM}_{h(I)} \perp, \{1\}$$

where $\cap$, $\dot{\cup}$, $\perp$ stand for the intersection, span, and orthogonalization respectively. With these definitions it is easy to see that these propositions form an orthocomplemented, orthomodular lattice $L^{QM}_{I\theta}$. But by the spectral theorem for any observable θ and Borel set $E \subseteq R$, we have a set of projection operators I_θ on the Hilbert space of the system. So for every propoisition $P^{QM}_{\theta,E}$ we have a prescription for associating a projection operator I_θ and a subspace $h(I_\theta)$. Hence we get, using definitions, the same structure $L^{QM}_{I\theta}$.

Here comes the peculiarity of quantum mechanics. In the classical case, the algebraic structure of the observables is such that it allows the product algebra to be a Boolean algebra. This is possible because of the fact that all the observables in classical particle mechanics are compatible with each other. In the case of quantum theory, this is not true. Here we have blocks of Boolean algebras formed out of those observables that are compatible with each other. Since they are compatible, their corresponding subspaces coincide either pairwise or are orthogonal to each other. Hence given any proposition $P^{QM}_{\theta,E}$, it would determine an ultrafilter on such a block but omit any reference to elements of other blocks involving incompatible observables. From this Hooker concludes:

> Facts remain however that when we have $P^{QM}_{\theta,\{r\}}$ true, θ a basic observable, $\{r\}$ a singleton set in R...we have $P^{QM}_{\theta',E}$ false for every $E \subseteq R$ for any θ' which does not commute with θ.... From this it is quite clear that QM ontology for Bub, cannot be a pure classical ontology and he is in fact driven by the 'logic' of his own position to claim that the facts of QM are physical situations in which not all of the classical properties appear [Hooker, 1973: 265].

This conclusion, I would like to point out, is quite unwarranted. I am going to argue later that it is Hooker's misinterpretation of Bub and Putnam which leads him to such a conclusion. Both Putnam and Bub have categorically asserted that a particle has all the classical properties it is supposed to have. So, if Hooker's conclusion were to be followed, then the whole of Putnam-Bub approach would be self-contradictory and should be abondoned altogether. In fact, a Hooker-type interpretation of the view would obviously lead to a kind of hidden variable theory or unsolvable measurement problem which does not exist in their scheme.

II.3. *Dorling*

Such a possibility has actually been pointed out by John Dorling. In his review of Bub's book he writes [Dorling, 1976]:

> The most acute difficulty here is this: Bub wants measurements merely to discover and not to create the value of the measured observable. He therefore wants any measurable observable to have a particular (generally unknown) value at any time whether or not the system is in an eigenstate of the corresponding operator. In particular, each component of the spin of a spin one system is to have a particular value at a given time. Now this is just what Kochen and Specker's argument rules out for a certain special choice of 117 different spin-axes directions. But Bub's position is that it does not rule this out, but only rules out the conjunction of this along with the assumption (rejected by Kochen and Specker) that the elementary propositions assigning values to spin components obey the laws of classical logic.
>
> Now it is not clear in Bub's discussion just where his assumption of non-classical logic for the propositions in question blocks the derivation of Kochen and Specker's contradiction.

I am going to argue that Dorling essentially makes the same point as Hooker.

III. In Defence of Quantum Logic

III.1. *Harrison*

Let us now get back to Harrison. As one starts with his paper one gets the impression that he is trying to defend classical logic. But as the article progresses his remarks become increasingly obscure. For example, he assumes (*a*) that given the position of the particle, its momentum would be indeterminate; (*b*) that it would be perfectly possible in that case to maintain that the particle does not have any momentum at all; and (*c*) that the proposition 'momentum of the particle is equal to mv' is false. Presented this way, it is relatively simple to defend quantum logic against such an attack. For, if the momentum is indeterminate, how can one claim that the proposition 'momentum of the particle is equal to mv'is false? However, it is possible to make his

remarks appear more respectable. But before we can do that, let us take an example used by many, particularly, by Finkelstein [Finkelstein, 1972] from whom Putnam took his lead.

Consider a spin $\frac{1}{2}$ particle. Let σ_z be the spin in the z-direction having eigenvalues 1 and -1 in states $\binom{1}{0}$ and $\binom{0}{1}$ respectively. Let A_1 denote the proposition '$\sigma_z = 1$' and A_2 the proposition '$\sigma_z = -1$'. Let σ_x be the spin in the x-direction and call the proposition '$\sigma_x = 1$' A_3, the state being $\binom{1/\sqrt{2}}{1/\sqrt{2}}$. Then according to Putnam's reading, given A_3, there are two possibilities for σ_z, and only two propositions A_1 and A_2. Thus $A_3 \cdot (A_1 \vee A_2)$ is true. Reasoning in the way Putnam does, it is easy to see that the law of distribution fails because $(A_3 \cdot A_1) \vee (A_3 \cdot A_2)$ is false. But Harrison's objection is that given A_3, the spin in the z-direction is indeterminate and $A_1 \vee A_2$ is false since it does not exhaust the possibilities. This implies that another proposition A_4 (the spin in the z-direction is indeterminate) must be included in the disjunction and assumed to be true or false. The implication

$$(A_3 \cdot (A_1 \vee A_2 \vee A_4)) \supset ((A_3 \cdot A_1) \vee (A_3 \cdot A_2) \vee (A_3 \cdot A_4))$$

would be true but at the cost of giving way to a proposition devoid of any operational significance at all, for whenever we measure σ_z (I mean the energy due to spin) we get either 1 or -1.

There is a more serious reason to reject Harrison's claim. He is clearly confusing between propositions pertaining to the system with statements about the context. The context may, of course, affect the truth-value of a proposition, but it cannot certainly be included in the set of propositions asserting the properties of the system. This can be easily seen as each of A_1 A_2, A_3 corresponds to a subspace of the complete Hilbert space of the system but nothing corresponds to A_4.

There are other troubles too. We can direct an old question to Harrison. Suppose we assign (by measurement, say) the particle spin + 1 in the z-direction. Then, in such a view, the spin in the x-direction is indeterminate. However, we could have alternately chosen to assign (again by measurement, say) it a spin + 1 in the x-direction and its spin in the z-direction would have been indeterminate. So a particle's having a spin at a particular time would depend upon the kind of measurement we are making, or even worse, on our choosing to assign it one or the other. It is precisely to refute such a position that Einstein along with Podolsky and Rosen wrote their oft-quoted paper[3] [van Fraassen, 1976].

The only way Harrison can justify his remarks is by arguing like Bohr (i.e., by bringing in context-dependence or presupposition) as Heelan or van Fraassen has done. But then 'the logic' is not classical as has been shown by them.

In his paper Harrison has raised an issue concerning Putnam's paper that

should be taken seriously.[4] He remarks: The proposition that these are all the possible velocities that there are must be assumed by those who wish to reject classical logic' [Harrison, 1983].

The issue is the following: we have a theory T_1 (say) whose predictions are in accordance with our observations. There could be another theory T_2 which also explains the same set of experimental results, but the algebraic structure of these could be different. Can we now claim on the ground of simplicity alone (as Putnam does) that there is nothing in reality answering to the terms of T_1 which do not occur in T_2? That, in general, we cannot is apparant from the case of classical statistical mechanics (T_1) and classical particle mechanics (T_2).

But in this case, there is a way out which was not taken note of by Putnam earlier [Putnam, 1975]. This depends upon a formal result of Kochen and Specker who have shown that the algebra of the observables of quantum theory is not imbeddable in that of classical particle mechanics. This sharply distinguishes the case from that of classical particle mechanics and classical statistical mechanics, for in the latter case the algebra of statistical mechanics is very much imbeddable in that of particle mechanics. In the absence of Kochen and Specker's result, Putnam's way of introducing quantum logic is as *ad hoc* as he feels the introduction of hidden variables are in quantum theory. But these charges are no longer applicable to Putnam's revised position [Putnam, 1983]. Kochen and Specker's argument was, however, well taken care of by Bub in his work [Bub, 1974].

III.2. *Hooker and Dorling*

Before we can answer Hooker, let us first formulate clearly an equivalence principle extensively used in the literature.

Equivalence. The following statements are equivalent:

(α) The two-valued homomorphisms on the Boolean subalgebra of the partial Boolean algebra of the propositions of quantum theory assign 1 to the proposition $P^{QM}_{A,\{a_1\}}$ iff A has the value a_1;

(β) An observable A has a definite value iff the state of the system is $|a_1\rangle$ where $A|a_1\rangle = a_1|a_1\rangle$.

The proof, I suppose, is quite straightforward, and I merely outline it here. From the theory of Boolean algebra a two-valued homomorphism is definable[5] iff the subalgebra $\mathscr{B}$ of the partial Boolean algebra is a Boolean algebra. But $\mathscr{B}$ can be a Boolean algebra iff the observables pertaining to it are compatible with each other. They are compatible with each other iff they share the eigenfunctions. In quantum theory the probability that A has a value a_1 is 1 iff it is in the state $|a_1\rangle$. *QED*. The objections to quantum logic raised by Harrison, Hooker and Dorling are all based on the acceptance of (α) or (β), none of which is acceptable to the proponents of quantum logic.

Let us now see Hooker's conclusion in the light of Equivalence. Hooker clearly presupposes (a), for through ultrafilter construction he is clearly after two-valued homomorphism and also identifies two-valued homomorphisms with truth-value assignments. But does his conclusion follow? There are reasons to think that it does not. To see this a simple example due to Bub would suffice. Consider a system associated with a z-dimensional Hilbert apace. Let A, B be two incompatible observables such that

$$\left.\begin{aligned} A|\alpha_i\rangle &= a_i|\alpha_i\rangle \\ B|\beta_i\rangle &= b_i|\beta_i\rangle \end{aligned}\right\} \ (i=1, 2, 3).$$

Here propositions asserting particular values of all the observables compatible with A will form the Boolean algebra $\mathscr{B}_A$, say. Let $\mathscr{B}_B$ be such a Boolean algebra for B. It is apparent that an ultrafilter f_A on $\mathscr{B}_A$ would omit any reference to any element belonging to $\mathscr{B}_B$. So a two-valued homomorphism on $\mathscr{B}_A$ would assign 0 to every element belonging to $\mathscr{B}_A$, while assigning 1 to elements belonging to f_A. But for the same reason a two-valued homomorphism on $\mathscr{B}_B$ would omit any reference to elements of $\mathscr{B}_A$ and (a) assign 0 to them. So the values of every propositions would oscillate between 0 and 1. Hence it is wrong to conclude that given a definite value for any observable, say A, i.e., given a proposition $P^{QM}_{A,\{a_1\}}$ to be true, we have $P^{QM}_{B,\{b_j\}}$ false for every j. This only shows that there is something wrong with the very way the truth-values are assigned through ultrafilter construction. This is precisely what Belinfante [Belinfante, 1973] claims Kochen and Specker's paradox shows. I shall now present Belinfante's proof of this paradox instead of Kochen and Specker's, so that we can also show why Belinfante's claim that certain propositions lack truth-values is untenable. This will also show how Belinfante, Hooker and Dorling are really claiming the same thing. This way we can answer both Hooker and Dorling. Note that the purpose of Kochen and Specker's proof is to refute hidden variable theories of a particular kind. quantum theory gives us a state function ψ for any system which can be written as

$\psi = \Sigma c_1 \phi_1$ where $\{c_1\}$ is a set of constants, $\{\phi_1\}$ is a complete set such that

$A\,\phi_1 = a_1\phi_1$, a_1 being the eigenvalues i.e., the possible values of the observable A. The theory only predicts a probability $|C_k|^2$ that the observable A would have the value a_k. Now the problem any hidden variable theory wants to solve is to find out a set of parameters which together with ψ would give the exact state ϕ_n in which the system is at a definite instant. The transition from ψ to ϕ_n as a result of measurement may be described as

$$\psi \to \phi_N \text{ with } n = n(\psi, \xi; \{\phi_1\}) - (4)$$

where the function n simltaneously predicts the result of every measurement that could be made. Every quantum mechanical pure state would then turn

out to be a classical mixture and for every value $\xi^{(\beta)}$ of the hidden variable ξ there would be a probability p_β and any uncertainity about the measurement (4) would be due to the uncertainity of assigning a $\xi^{(\beta)}$ to ξ in the unique function $n(\psi, \xi, \{\phi_1\})$. This p_β would tend irreversibly to an equilibrium distribution $\bar{p}_\beta$ when

$$\bar{p}_\beta = p_\beta \ (t \to \infty)$$

For any observable in an ensemble, corresponding to a pure Quantum mechanical state, such a theory should predict a probability

$$\bar{P}_k(\psi, \{\phi_1\}) = \int_\beta^{(\psi,k)} \bar{p}_\beta$$

where $\int_\beta^{(\psi,k)}$ stands for the sum over all the β and a given index value k of n:

$$k = n(\psi, \xi^{(\beta)}, \{\phi_i\}).$$

But if the theory should predict what quantum mechanics does, then $\bar{P}k$ should turn out to be the familiar quantum mechanical distribution

$$\bar{P}_k(\psi, \{\phi_1\}) = \left|\int_k \phi^* \psi\right|^2$$

Within this framework Kochen and Specker are supposed to have generated an apparent contradiction regarding the truth value of the propositions (or, to follow their own terminology strictly, regarding the values of the observables). They considered an ortho-Helium atom in its triplet state ($n=2$, $l=0$, $s=1$). But we have for $J = L + S$

$$J^2 = J_x^2 + J_y^2 + J_z^2$$

where J_1 ($i = x, y, z$) are the components of angular momentum. It can be shown that for this triplet state the J_1's have simultaneous eigenfuctions. But as $J^2\phi_m = j(j+1)\,\phi_m$ and $J=1$, J^2 must have the value $2\hbar^2$ and so one of them should have the value 0. They also described a set-up in which it is possible to know which of the spin angular momentum components is 0. We can now define a quantity

$$V_1 = df 1 - [J_i^2/\hbar^2] \quad (i = x, y, z)$$

which can only assume the values 0 or 1 and can be interpreted as truth-values of propositions of the form $P^{QM}_{Ji^2,\ \{\hbar^2,0\}}$. Suppose we have a set of

directions $\hat{n}$ along which $J_n^2=0$ or $V_n=1$. Then we can expect that there is a set η of directions $\hat{n}$ such that for a given value of ξ

$$(A) \qquad V_n=1 \text{ and } J_n^2=0 \text{ if } \hat{n}\in\eta$$

$$V_{n'}=0 \text{ and } J_{n'}=\hbar^2 \text{ if } \hat{n}\notin\eta$$

The paradox then generated is that there does not exist a set η of directions such that (A), (B) and (C) are satisfied, where (B) and (C) are the following:

(B) For any *triad* of orthogonal directions, one is a direction $\hat{n}$ for which $J_n^2=0$, $V_n=1$ and the other two are directions for which $J_{n'}^2=\hbar^2$, $V_{n'}=0$;

(C) Correspondingly, for any *two* perpendicular directions l and m not both J_l^2 and J_m^2 will be zero simultaneously but one or both of them must be $\hbar^2$, i.e., one or both of V_l and V_m must be zero. If (B) and (C) hold, then according to (A) the value of J_l for a particular i would oscillate between $\hbar^2$ and 0. From this Kochen and Specker concluded the impossibility of hidden variable construction. On the other hand, Belinfante claims that this proves the non-existence of truth-values rather than the impossibility of hidden variable construction, whereas Dorling believes this to disprove the existence of any value of J_l at all. Since the V_l's have a 0, 1 assignment, it is clear that *Hooker's attempt is really an algebraic formulation of the same result.*

Let us now concentrate on the structure of the proof. It is clear from the presentation that such a proof accepts (β) and so by implication (α) of Equivalence. Note also that in the proof (B) and (C) are prefectly in accordance with quantum mechanics and were obtained from the relation

$$J^2=J_x^2+J_y^2+J_z^2$$

Therefore (A) and consequently (β) are suspect and by implication (α), i.e., two-valued homomorphism. Belinfante has generalized the paradox to Hilbert space and that is really of importance here. This amounts to proving that the same contradiction would be generated for a function $v=v(\phi_n;\psi,\xi)$ where v is 1 if the system is in the state ϕ_n (so that the observable has the corresponding eigenvalue as its value) and $v=0$ would mean that the proposition 'the system has the A-value a_l' when $A\,\phi_l=a_l\,\phi_l$' is false. We have seen that this is possible. So what comes out is that the truth-value would jump between 1 and 0 or equivalently the following conditions cannot be satisfied:

(a) Every $v(\phi_n;\psi,\xi)=1$ or 0

(b) For every orthogonal set $\{\phi_n\}$ with $1\leqslant i\leqslant n$

$$\sum_{i=1}^{N} v(\phi_n;\psi,\xi)=1$$

This clearly shows that Kochen and Specker's proof stands valid, only if we identify two-valued homomorphisms with truth-value assignments. Bub rejected this to get rid of the contradiction. It is clear that if we agree to assign states and so some probability within the interval [1, 0] to propositions, there will be no problem in satisfying (b) and the whole problem would be resolved.

We are now in a position to take up the ontological issues Hooker raised. He reached those conclusions by the results we have already discussed in conjunction with what he proposed to be the Identity Principle.

Identity Principle. A continuous spatio-temporal trajectory constituting the successive locations of a substance also constitutes the identity of the individual whose trajectory it is.

Now if a particle has a position but does not have a momentum at a point of time and has momentum but does not have any position at another time, then certainly it does not have a continuous spatio-temporal trajectory. Hence by the Identity Principle it cannot properly be called an individual. But, as we have seen, if we give up classical logic and agree to accept a non-classical logic, then there will be no problem in claiming that a particle has all the properties it is supposed to have classically. So there is no problem in quantum logic in identifying individuals strictly in accordance with the Identity Principle.

This solves another problem which has been raised by Hooker following Bohm [Hooker, 1973:276; Bohm, 1971:122]. If it were the case that quantum mechanical individuals are not identifiable, then they do not have well-defined trajectory which is vital for the concept of signals in relativity. Hence Hooker's proof would have shown, as indeed he claims, that any successful fusion of the two theories is impossible. But we have seen that the Identity Principle holds in quantum logic. Therefore, although attempts to have a consistent formulation of relativistic quantum mechanics have failed so far, there is no reason to suppose that it is impossible.

IV. Conclusion

We have taken up three recent objections, viz., those of Harrison, Hooker and Dorling, against the Putnam-Bub view which claims that the logical structure of the world is non-classical. It is not entirely clear what Harrison really means. He claims that (a) given the position of the particle its momentum would be indeterminate, and then goes on to state further that (b) the proposition 'the momentum of the particle is equal to mv' is false, i.e., Putnam's claim that the second conjunct of (1) is true must be false, and consequently Putnam's argument against the law of distribution does not work. One can interpret this objection in three possible ways. The first reading would be to take these remarks literally. But then one cannot take them seriously because (a) and (b) are incompatible statements. Alternatively, one can read his remarks operationalistically. In that case, he cannot answer *E-P-R* type of situations.[6] Finally, one can interpret his remarks along the lines of Bohr. But then the logic is non-classical.

Regarding Hooker it has been shown that his long argument is an attempt at bringing in two-valued homomorphisms as truth-value assignments. Dorling, on the other hand, raises his objection by bringing in Kochen and Specker's result. It has been shown how this result (the alleged contradiction) also depends upon the acceptance of two-valued homomorphism as truth-value assignment. Hence it turns out that Dorling and Hooker basically raise the same objection; Hooker only expressed it in algebraic terms. Now, the postulate that an observable A has a definite value a_1 only if it is in the state $|a_1\rangle$ when $A|a_1\rangle = a_1|a_1\rangle$ is an independent postulate of quantum theory, which by Equivalence [Sec. III. 2 above] brings in two-valued homomorphisms. Its rejection would thus rid us of the troubles pointed out by Hooker and Dorling. This is the path taken by Putnam and Bub. Neither Hooker nor Dorling takes note of this. Hence their objections are beside the point. Moreover, since it is very much possible to identify particles in the Putnam-Bub view strictly according to Identity Principle, Hooker's 'proof' of the impossibility of relativistic quantum theory does not apply.

Notes

1. That Quantum Mechanics has a different logic has been claimed by many authors starting from Reichenbach. Here I want to defend the Putnam-Bub view.
2. An ultrafilter is a maximal proper filter in a Boolean Algebra. A filter is a non-empty set f such that
   (*i*) if $a,b \in f$, then $a \wedge b \in f$
   (*ii*) if $a \in f$ and $a \leqslant b$, then $b \in f$
   where $\wedge$ and $\leqslant$ are the familiar operations in a Boolean Algebra. A proper filter is a proper sub-set of the Boolean Algebra.
3. A typical operationalist would, of course, not give up so easily. But see [Hooker, 1972]. I think it is largely accepted now-a-days that operationalism cannot answer *E-P-R* type of situations satisfactorily.
4. One may doubt whether Harrison meant anything like that. Anyway it is a valid objection regarding Putnam's earlier position. Obviously, given Kochen and Specker's result, Harrison's remark is incorrect.
5. No doubt it is accepted that the concept of ultrafilter can be extended to lattices. In that case it would be possible to define ultrafilter on the partial Boolean algebra of Quantum Mechanics also [Bub, 1974 : 120]. But if we want the ultrafilters to have the property that for every element a either a or a' is a member of it, then my remarks apply. But this is the property which is relevant here.
6. Even operationalism accepts that the logic of quantum mechanics is non-classical [Finkelstrin, 1972].

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Towards a dispositional ontology

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I

To ordinary human experience a physical object is known by what are termed its properties, powers and dispositions. Every object is believed to possess certain intrinsic properties, its inner nature and its states, which serve to differentiate it from other objects. The history of a thing is determined by the interaction of this inner nature and the external circumstances in which it is placed from time to time.

In physics, physical object or matter is defined as that which has spatio-temporal existence and possesses mass. These two, therefore, may be reckoned as the defining or primary properties of matter. Besides these two, matter is said to possess several other general properties like density, elasticity, viscosity, hardness, malleability, ductility, etc. In philosophic parlance, the latter properties are termed dispositional, and much dispute has been raised regarding their nature. The views, centring the nature of dispositional properties, range from these being condemned as unreal and occult properties to their being identified with the inner nature and intrinsic properties of an object. One's views about dispositional properties make much difference in one's philosophical position. I shall, therefore, begin by evaluating the prevalent views on this topic before finally offering my own conclusions.

II

When we say 'salt is soluble in water', any of the following may be the case.

(*a*) We are just asserting a non-truth functional conditional (or a set of non-truth functional conditionals) like 'if salt were put into water, then it would dissolve'. Asserting such a conditional in similar contexts is known as minimal dispositional ascription, and the conditional is to be treated as an inference-ticket which warrants inference from 'salt is put in water' to 'salt dissolves'. We need not assume or assert that anything special is going on within salt which makes salt soluble and some other objects insoluble.

(*b*) Salt has some real and intrinsic property which in itself is dispositional and this property of salt entails that salt will dissolve whenever it is put into water.

(*c*) Salt has the power to get dissolved in water, i.e. if salt is immersed in water, then it will be dissolved in virtue of its inner nature.

(*d*) Salt is in a particular state which is causally responsible for salt's dissolving in water. This particular state of salt is the ground or basis of salt's water-solubility. Salt, therefore, has some occurrent feature or property which makes it soluble, and absence of this feature in wood makes it insoluble.

The above-mentioned possible descriptions of the state of affairs when a dispositional property is ascribed to an object may be named, following Mackie[1] (Mackie, 1973), the phenomenalist, the rationalist (b & c) and the realist account respectively.

The term 'phenomenalist' was coined by Armstrong[2] (Armstrong, 1968) with reference to the position upheld by Gilbert Ryle[3] (Ryle, 1949). But this position may be maintained even without subscribing to the 'inference-ticket' view. To be branded as a phenomenalist it is sufficient to maintain that an object may possess a dispositional property, if it is possible to have a minimal dispositional ascription with reference to that particular object, and that this ascription does not depend on any occurrent or concurrent basis.

Minimal dispositional ascription is, however, inadequate for explaining a dispositional situation unless it is combined with the ascription of a categorical basis. We may try to comprehend this position with the help of an example given by Mackie. Mackie wants us to picture an imaginary situation where two glasses *a* and *b*, both made at the same time and having identical intrinsic features, vary in their behaviour, i.e. *a* crumbles into pieces on impact but *b* does not. It will be very natural under such circumstances to make minimal dispositional ascription to *a* and not to *b*. How are we to explain the above-mentioned phenomenon without referring to some categorical basis? Any such attempt on our part will be met with a veritable dilemma. Either we shall have to maintain that behaviour-variation of these two glasses is due to no cause at all or we shall have to explain this phenomenon by pinpointing a temporally distant cause without any link in between. We may, therefore, escape between the horns by attributing the cause of variation in behaviour of *a* and *b* to some real occurrent state of the object, i.e. the ground of the disposition in question.

The inadequacy of the phenomenalist view is felt more acutely while dealing with a multiply-manifested dispositional property. If a thing's possessing a disposition is nothing but the assertion of a conditional about that thing, then there should be as many dispositional properties as there are conditionals, i.e. the possibility of its manifestations. It is, therefore, very strange that Ryle, in spite of his phenomenalist position, could distinguish multi-track from single-track dispositions. For it is more likely on this view to consider different manifestations of a single disposition as a cluster of different dispositions. Let us illustrate our position with an example. Elasticity of an object may be manifested by its contracting after being stretched or by its expanding after being compressed or by its being bounced on sudden impact. All these manifestations can be expressed in different conditionals. If we are not ready to admit the existence of an underlying state common to all these occurrences, then there is no reason why these should be taken as different manifestations of the same disposition rather than a cluster of different dispositions.

A.D. Smith[4] in his article (Smith, 1977) objects to Mackie's formulation of the phenomenalist viewpoint. Mackie (Mackie, 1973) defines a minimal disposition as follows:

> ...if '*M*' is a sure-fire singly manifested dispositional predicate (e.g. fragile) ...*M* (*x*, *t*)=If *K* (*x*, *t*), *L* (*x*, *t*) where this if-sentence is a non-material conditional.[5]

Smith points out that such a formulation will hold good only if there is some direct connection between the antecedent and the consequent of the above-mentioned non-material conditional. Since presence of such a direct connection is neither evident nor can be construed from Mackie's formulation, this formulation is definitely faulty. He offers an interesting example in support of his view. Let us imagine that a sturdy block of wood is sharply tapped at *t*, and that it is also exposed to a special ray (viz. *z*-ray) at *t*. Thus the block of wood is made to splinter in exactly the same manner as it would have been if it were fragile. Hence the above formulation of the phenomenalist position becomes questionable because of the possibility that an object may be knocked at *t* and break at *t*, even though it is not fragile. If someone points out that this example is inappropriate because it overlooks one of the unanimously accepted features of non-material conditionals that there is a *connection* between its antecedent and its consequent, then for him Smith reconstructs his example by suggesting a few changes. He wants us to conceive of a slightly more complicated situation where the beaming of the *z*-ray on to the block of wood is caused by tapping of the block. Here certainly the connection between the antecedent and the consequent is established, but once again such a connection makes the block of non-fragile wood fragile. It may, however, be pointed out that tapping has become relevant to the situation only through the mediation of the beaming of the *z*-ray, whereas the beaming of the *z*-ray on the block of wood is directly connected with its breaking into splinters. Smith, therefore, maintains that an adequate formulation of the phenomenalist view of minimal dispositional ascription should include a reference to the directness of a connection between stimulus and response.

Smith's objection against Mackie is, however, not entirely fair. Mackie has not felt it necessary to spell out the directness of connection, simply because it is a matter of logical convention that there should be a connection between the antecedent and the consequent of a non-material conditional. Moreover, since the consequent of such a conditional is always asserted within the scope of the antecedent, these two should always be directly connected so that the antecedent is never relegated to redundancy. If the beaming of

z-ray on the block of wood causes it to break, then the minimal conditional will be:

If x were exposed to z-ray at t, then x would break at t.

and not

If x were suitably knocked at t, then x would break at t.

Thus the minimal dispositional ascription in case of fragility may retain its sense.

We, therefore, agree with Mackie in upholding that a minimal dispositional ascription is not faulty but inadequate. Such minimal dispositional ascription always cries for further explanation, and such explanation is available only if it is supplemented by the admission of the existence of an underlying state. Mackie, therefore, is in favour of a full dispositional ascription instead of a minimal one, and the full dispositional ascription of x in fragility will be

x is such that if x were knocked at t, then x would break at t

notwithstanding the fact that Mackie has only a linguistic hunch in support of such a position.

The propagation of the rationalist view has been attributed to Mellor[6] (Mellor, 1974) and Harré[7] (Harré, 1970, 1975.) D.H. Mellor maintains that dispositions are real, in-built properties of objects. These properties are not to be identified with the structural properties or what has been termed by the realists 'the categorical basis' of objects. These real, intrinsic properties entail their manifestations and remain actually present both when the disposition is being manifested and when it is not. Mellor has no objection in granting that dispositional properties may possess some bases, but these bases need not be categorical.

Two major criticisms have been put forward against this position from the realist quarter.

While analysing a dispositional property like fragility we try to provide some causal explanation of the glass's breaking when dropped. Such causal explanation will be easily available only if we admit that there is a categorical basis, e.g. the molecular structure of glass, which is only contingently related to the manifestation of the disposition in question. But according to Mellor, this intrinsic real property (to which fragility refers) over and above the non-dispositional property like molecular structure of glass entails its display. The connection between fragility and breakage thus becomes logical and ceases to be causal. Hence such a theory fails to give a satisfactory explanation of the event in question. One need not insert such a real and intrinsic but dispositional property between the non-dispositional basis and the causal behaviour of an object. Mellor, of course, faces this objection non-challantly, and once again points out that fragility has no non-dispositional basis, and, therefore,

the question of inserting an extra element between the non-dispositional basis and the causal behaviour does not arise at all. Besides, fragility-entailing-breakage does not pose any problem to Mellor. He says that only events need causes. A disposition is not an event. Therefore, the relation between the disposition and its manifestation is not causal. Since an event alone can be caused, the cause of the glass's breaking may be said to be its being dropped. But it is the glass's being fragile that makes dropping it the cause of its breaking. But fragility or *that the glass would break if dropped* is no event at all, and so needs no cause in the form of a categorical basis. He further maintains that the hypothesis that the glass is fragile may be tested from independent evidences, and explanations of it may be had on the Hempelian model.

Mackie's second objection is:

> ...the suggestion that there are such properties is in open conflict with Hume's principle that there can be no logical connections between distinct existences. For if fragility in this sense were an intrinsic property of the glass, then it, the being struck, the breaking would all be distinct existences, and yet on this view the conjunction of the first two would entail the third.[8]

To this objection Mellor replies in the same vein that the dropping of the glass and its breaking are both events, and no logical connection holds between them. But the glass's being fragile at the time of breaking is not an event but a property. And there is no bar against logical connections obtaining between properties and events. Hume's restriction does not apply unreservedly to the mixed ontology of Mellor comprising things, properties and events. The principle holds within each category.

Mellor-Mackie controversy distinctly reflects their individual standpoints. Mackie has strong Humean moorings. Mellor attempts to drift away from that trend. But it seems that Mellor also accepts the Humean theory that two events which are causally related must be contingently related. Harré, on the other hand, we shall find, is more loyal to the Lockean tradition and boldly supports necessity in causation.

Harré's position is very interesting but at the same time very much suspect because of his ontology of power. Mackie considers his view along with Mellor within the fold of rationalism. Harré warns us, at the very outset, that the empiricist reservation against his ontology of power is totally unfounded. By introducing the concept of power he is not resorting to anything occult or mysterious. He categorically points out that power ascription does not amount to 'an attribution of *occult* quality, because it is not a quality attribution at all.'[9] Empiricism still may have reservations against power in so far as they are not manifest.

Harré then goes on to distinguish between active powers and passive powers or liabilities and maintains:

> Many properties of substances are strictly speaking liabilities and not powers, though their analysans is formally alike, e.g. all those old favourites like 'solubility', 'inflamability', 'brittleness', etc.[10]

But one must remember that what is agent or possesses active power in relation to some object may become patient in relation to something else and vice versa. As he says:

> We are not sure that any naturally occurring entity can fall under the pure concept of patient.

Thus agent-patient, power-disposition being correlates, explanation of any one of the pairs necessarily refers to the other. Harré, therefore, contends:

> The reason why we believe that a certain disposition can be asserted truly of a thing or material is that we think or indeed know that it currently has such and such powers. x has the power to A = if x is subject to stimuli or conditions of an appropriate kind, then x will do A, *in virtue of its intrinsic* nature.[12]

By intrinsic nature he means the intrinsic constitution or intrinsic enabling conditions which may not be the internal condition of the object. The intrinsic enabling conditions are satisfied by a thing or material object of a certain constitution, or having a certain crystalline structure. Even though a thing can be powerful only by virtue of its nature, still while ascribing a power to a thing one need not know the specific constitution of that powerful particular. Harré only demands 'an unspecific reference to the nature or constitution' of the thing or material concerned.

It will be evident now to a discerning mind why Mackie wanted to consider Harré and Mellor at par. Both of them ascribe real bases for dispositions but do not think that these bases are necessarily categorical or that categorical bases alone can be causally responsible for manifestation of dispositions. Both of them think that their theories are more suited for explanation in empirical sciences, and can avoid the drawbacks of phenomenalist account without committing oneself to the ponderous and almost insoluble problem of determination of truths of subjunctive conditionals.

The high claim put forward by the so-called rationalists in favour of their theories is, however, doubted by realists like Mackie. The real difficulty that Mackie points out in Harré's position stems from his theory of explanation. Harré thinks that, by introducing the concept of power, he will be able to put an end to the regress in explanation. But such a regress may be stopped, only if powers are considered part or whole of the nature of a thing. Here Harré's ambivalence is noteworthy. On the one hand, he postulates powers as 'ultimate entities, as point centres of mutual influence'. On the other hand, he maintains that their ultimacy is only remote and temporary. For, a physical field, which he thinks to be one of the most suitable candidates for being ontologically basic, is not a 'Parmenidean individual', and even at that basic

level a change of power and a consequent change of nature may take place. But Harré himself admits that an unchanging 'Parmenidean individual', the nature of which is identical with its powers, alone can halt the regress of explanation.

Introduction of power in the context of explanation appears to be unsatisfactory for following reasons also. (*i*) Postulation of separate powers to explain different phenomena leads to gratuitous multiplication of entities. (*ii*) Either we should introduce power over and above the categorical basis or we shall have to maintain that analysis of the constitution of a thing into its components will provide a proper explanation.

If somebody asks why opium puts people to sleep, then either we shall have to maintain that it has a special dormitive virtue which will be no explanation or too good an explanation, or we shall have to search for the soporific element within its nature in the following manner. Opium puts people to sleep because it contains morphine, and morphine has such a structure that it puts people to sleep. But if one postulates a dormitive virtue in opium one will not be interested in the analysis of its nature. Harré seems to vacillate between the realist and the rationalist position. That is why he ascribes power and proposes to analyse the physico-chemical nature of opium at the same time.

It may probably be said, in support of Harré's position, that a rationalist also can be a realist. Realism is no privilege of the Humeans. There is no logical incompatibility between analysing the nature of an object and ascribing power to that object, provided one is sure to which primacy should be granted. Harré grants primacy to power, and at the basic ontological level he identifies powers of a thing with its nature, e.g. a field of potentials. Such identification distinguishes his position from that of an empiricist realist. But he will not admit that such a theory makes him a non-realist. He has shown with a number of examples that in our experience we really come across powerful particulars; and those particulars are powerful by virtue of their intrinsic nature, even if we are not aware of the latter at the time of power-ascription. It may appear, at the first sight, that a field of potentials is not real or does not exist like tangible material objects. But unless, thinks Harré, one is committed to 'Jack Horner's' criterion of reality or exitstence one should unhesitatingly call a field real. Besides, it is just a matter of accident that a magnetic field is imperceptible. We can easily conceive of beings endowed with special organs sensitive to the magentic field. A magnetic field or any field of potentials has got to be real, for it occupies space for a time and exercises causal powers. In such a *dynamic* theory, powers do not require any substratum to reside in. So all the anomalies, arising out of ontology of substance and quality, can easily be got rid of.

Harré also claims to avoid the charge of essentialism which might have been brought against his ontology of power. In the world of large-sized objects, one might habitually put powers and dispositions under the head of nominal essences and natures of objects under the real essences. But one, who identi-

fies the power with the nature of an object, need not distinguish between nominal and real essences in the manner of Locke, which is a corollary of 'substratum' theory. The nature of an object, according to Harré, is knowable *a posteriori*; it can be discovered progressively with the advancement of scientific knowledge.

The realist view of dispositions has come to the forefront with the publication of D.M. Armstrong's book *A Materialist Theory of Mind*. He seems to have stirred up a hornets' nest by proposing such an analysis of dispositional properties. Let us analyse Armstrong's contention carefully and bring out its implications:

> To speak of an object's having dispositional property entails that the object is in some non-dispositional state or that it has some property (there exists a categorical basis) which is responsible for the object manifesting certain behaviour in certain circumstances, manifestations whose nature makes the dispositional property the particular dispositional property it is...in asserting that a certain piece of glass is brittle, for instance, we are *ipso facto* asserting that it is in a certain non-dispositional state which disposes it to shatter and fly apart in a wide variety of circumstances.[13]

Armstrong further contends:

> Dispositions are seen to be states that actually stand behind their manifestations. It is simply that the states are *identified* in terms of their *manifestations* in suitable conditions, rather than in terms of *their intrinsic nature*.

An analysis of Armstrong's contention highlights the following points:

(*i*) If an object x is to have a disposition d, then x must be in some state, say, s, which is causally responsible for the manifestation of d.
(*ii*) This underlying state of s must be specifiable in non-dispositional terms independently of the terms describing d.
(*iii*) Knowledge of the exact nature of this underlying state is not absolutely necessary.
(*iv*) A disposition is to be identified with the underlying categorical basis s which is causally responsible for manifestation of the disposition.
(*v*) The inevitable outcome of (*iv*) is that dispositions are cause of their manifestations.

The argument of Armstrong just mentioned is mainly epistemological, and by this argument he intends to avoid the phenomenalists' predicament.

Armstrong holds that we cannot have good reasons for ascribing minimal disposition to an object when that disposition is not manifested if we are not ready to accept the existence of a categorical basis. To say that a rubber band has a disposition of stretching one inch under force F is to mean that whenever subjected to force F it would stretch one inch. But how are we to be sure about this ascription? The guarantee is provided by postulating a categorical basis from which the manifestation follows as a physical necessity. But to

explain the disposition 'stretchable' the phenomenalist, who refuses to admit any categorical basis, has to bring in the concept of numerical identity. That is, to say, the band would stretch at any time in future because the same (numerically identical) band has behaved in that particular way in the past. This argument, however, is vulnerable, for numerical identity is no guarantee for a thing's property remaining unchanged through the passage of time. The phenomenalist standpoint will, therefore, lead to scepticism about dispositions.

The first opposition to Armstrong's view came from Rogers Squires[14] (1968). Squires alleges that Armstrong is unduly attributing a dispositional property to the categorical basis which will ultimately lead to the postulation of an infinity of categorical bases all sitting inside the object like Chinese boxes. The categorical basis, which is responsible for the manifestation of disposition, is present even when the dispositional property is not manifested. That is, the categorical basis *tends* to manifest the dispositional property under favourable conditions. So the categorical basis, which has the disposition of manifesting the dispositional property requires, in its turn, another categorical basis and so on *ad infinitum*.

Squires further objects that Armstrong posits a third entity, viz. a categorical basis over and above the thing that has disposition and its manifestations and asserts that, given similar favourable conditions, the correlation between the thing and its dispositional manifestations will continue because of the presence of the categorical basis. But the third entity is superfluous because the said correlation can be established between the thing and its behaviour without the third entity. If, however, the correlation is sought to be established through the mediation of the third entity, then that correlation cannot be justified at all. Even granting the possibility of justifying the correlation between the thing and its dispositional manifestations, the phenomenalist can hurl him back the same question: if the dispositional property changes, even in the case of a numerically identical object at a certain interval of time, then what is the guarantee that the correlation will hold in case of qualitatively similar objects for all time to come? The correlation between the object of a certain sort and behaviour of a certain type is merely contingent. Hence Armstrong should not have indulged in unnecessary multiplication of entities.

The third objection of Squires is directed against Armstrong's thesis that dispositions are to be identified with the inner state (the categorical basis) of the thing, which are causally responsible for the thing's manifest behaviour, and, therefore, dispositions are causes. Squires thinks that this thesis of Armstrong can be easily reduced to an uninteresting tautology, e.g. a thing's disposition to behave in certain ways causes it to behave in just those ways. Squires, therefore, concludes that dispositions are not causes but the things that have dispositions are causes. Thus a dispositional statement, e.g. a glass breaks because it is fragile only helps to narrow down our field of investigation and determines the area where one may search for the cause.

Armstrong[15] tries to meet Squires squarely but his shot fails to clear the net. Armstrong admits that he really attributes a disposition to the categorical basis of the first disposition, and this second disposition (say, *d*) also requires a categorical basis (viz. *S*) which would cause manifestation of *d* at *t*, were conditions propitious. But he tires to convert the vicious regress into a virtuous one by pointing out that *s* is identical with *ś*. A little manipulation with symbols will expose the absurdity of this position. By substituting *ś* for *s* in Armstrong's thesis we shall get; *s* would cause *s* to manifest *d* at *t*, were conditions propitious, i.e. a state would cause itself to cause the manifestation of *d*, were conditions propitious and this is surely absurd.

L. Stevenson[16] (1968-69) proffers a more curious solution to Armstrong's problem. Stevenson attempts to salvage Armstrong's argument simply by replacing the necessary causal basis theory by the thesis that the existence of such a basis is always a good bet as a matter of fact. Since by attributing a disposition to an object we are not committed to the existence of an underlying state, we are thereby not committed to an infinity of underlying states. But Stevenson's suggestion does not really strengthen Armstrong's hand. If existence of a causally responsible categorical basis follows merely, as a matter of fact, from the ascription of a disposition to an object, then one may commit oneself to any of the two alternative standpoints: (*i*) the disposition does not have any underlying state and, therefore, it is an ultimate or a brute disposition; (*ii*) the disposition has an underlying state. The first will be contrary to Armstrong's general anti-behaviouristic attitude (Armstrong developed his theory precisely to counter what he calls the 'behaviourist' account of psychological dispositions), and the second will reinstate the infinite regress. Of course, this regress may be put to an end by admitting once again some brute disposition at some stage of analysis.

David Coder[17] (1968-69) comes to Armstrong's rescue by offering a distinction between subjunctive properties and dispositional properties. He upholds that the property that can be attributed to the categorical basis of a disposition in question is not a dispositional property but a subjunctive property. A subjunctive property need not possess a categorical basis and thus the vicious regress may be avoided. As Coder puts it:

> Not every case of an object that would exhibit some behaviour *B* in some circumstances *C* is a case of an object with a dispositional property. At a minimum an object may be attributed a disposition on the grounds that it would exhibit *B* in *C*, only if not every object would exhibit *B* in *C*.

Coder's distinction between dispositional and subjunctive properties may be illustrated as follows. When the two ends of a stretched steel spring (*s*) are held in position in their stretched condition, (*s*) would contract to its unstretched length at *t*, if one or both of its ends were released at *t*. The question may be raised whether this is a disposition of (*s*) or a subjunctive property. It may be argued that this is a disposition since releasing one or both ends of a solid is not sufficient to make it contract to a smaller length. The material, first, must be elastic and, secondly, must be initially in a stretched condition. Coder may take a different approach and contend that being stretched would cause (*s*) to contract at *t*, were conditions propitious. Thus, this exemplifies only a subjunctive property, because releasing one or both ends of (*s*) would be sufficient to make 'being stretched'; or rather the state of being in tension would cause contraction. For any elastic object *x* such that is under tension would contract if released. No other property of the object is involved, and the event is a consequence of the fact that the object is under tension together with the fact that the length of an object increases under tension along the axis of tensile force. So we find that what Coder considers a subjunctive property may be interpreted as a disposition from another point of view. It is, therefore, very difficult to decide whether a property is subjunctive or dispositional even when one is conversant with Coder's definition.

Coder's own examples do not help us much in this respect either. Coder says that no one ever attributes a disposition like 'getting wet' to anything if that object tends to get wet, were it immersed in water. Because any object would get wet if it were immersed in water, and this behaviour is not due to any particular feature of that object. 'Tendency to get wet' is, therefore, a subjunctive property and not a disposition. Nor is it generally maintained that a house has a dispositional property of getting disintegrated at ground zero, were it exposed to an atomic blast. But unfortunately both the examples fail to clinch the issue because not every object gets wet if immersed in water, nor does everything disintegrate if exposed to atomic blast. An already wet object, the back of a duck or a heavily waxed steel ball having, very high surface tension, etc., do not get wet if immersed in water. A house, because it is a composite object, disintegrates at ground zero when exposed to atomic blast, but an electron does not. Therefore, there *are* special features of objects, besides the facts of immersion or exposure to atomic blast, which must be present to ensure that a thing would get wet if immersed or would disintegrate if exposed to an atomic blast. It surely goes to the credit of Coder that he invented a made-to-order distinction between dispositional and subjunctive properties just to support Armstrong's move from attributing dispositions to objects to attributing dispositions to states. But this distinction, it seems, is too tenuous to serve any useful purpose.

May we then suggest with Robert Cummins[18] (1974) that the states cannot have any dispositional property, because the concept of a state behaving in a certain fashion is not at all intelligible, and, therefore Armstrong's argument does not lead to any infinite regress? The suggestion appears to be plausible but is open to the objection that in common speech we very often use expressions like unstable states; hence states may possess dispositions. Really speaking, states themselves cannot be unstable but such an expression means that the objects in those states tend to change states frequently in a

variety of common circumstances. A state undergoing another state or a state persisting through changes does not make any sense at all. Talk of changes of state refers to one state of an object succeeding and replacing another, and not to changes in the state itself. As Cummins says:

> We do not speak of a gas being hot or a person being angry, and of those states *becoming more intense* but the natural (perhaps only) way to understand this is that the gas or person changed states from S_1 (300°F/angry) to S_2 (400°F/enraged) where S_1 and S_2 are states of the same kind (tokens of the same type).

Cummins thus removes the charge of infinite regress brought against Armstrong's argument by Roger Squires, and finds no objection in maintaining that for an object *x* to have a disposition *d*, x *must* be in a categorical state *s* and in identifying the disposition a with the underlying categorical state (*s*). Possession of such a non-dispositionally specifiable categorical basis is all the more necessary in cases of dispositions which can be acquired or lost by *x* at a particular point of time. But as a necessary consequence of his view that states cannot change or cause any change he has to refrain from saying that dispositions are causes. He can at best say that dispositions which are to be identified with states play an important role in causal explanations and, therefore, may be causes only in a derivative sense.

III

The above summary of the realist position makes it evident that a philosophically cogent formulation of the realist view of disposition is not easy to provide for. The phenomenalist thesis is counter-intuitive and, therefore, can be set aside without any qualms, but it takes much more courage and deliberation to choose between realism and rationalism over the dispositional issue.

The rationalist view that postulates some intrinsic power other than the categorical properties (like molecular structure, movement, etc.) comes nearer to the common sense view. The common man, totally ignorant of scientific theories and philosophical analysis, is more prone to regard dispositions of an object as causal powers which enable the object to behave in a specific manner under specific circumstances. These powers are generally considered part of the nature of the object.

The realist, on the other hand, thinks that the rationalist view is the outcome of a metaphysical double vision as well as a confusion involving the epistemological and ontological issues. These powers are nothing but the causal processes which are thought by the rationalists to be some latent properties or potentialities of the objects that enter into the causal processes.

Another reason for the popularity of the rationalist position lies in the fact that almost all the properties are known to us only by the effects they

produce; and since no object carries any tag on it describing its molecular structure or molecular arrangement, we fail to notice the role, played by its categorical properties, and ascribe causal powers to the properties, which appear to be responsible for bringing about some specific event under specific conditions. Despite this, the realists identify dispositions with the intrinsic categorical properties of objects. As Mackie says:

> It is far more reasonable to suppose that electrons and the like have, intrinsically, merely whatever categorical features they do have, and that these in interaction with the categorical features of other things, generate the causal behaviour which 'dispositions' or 'powers' are a shadow.[19]

All the problems about dispositions, it would appear, stem from the same root, i.e. inadequacy or vulnerability of the different definitions of dispositional properties. Nor is there any rule of thumb by the help of which we can easily draw a line between properties which are dispositional and those which are non-dispositional. As a result, there ensues all sorts of confusions regarding the nature of dispositions. But once we find a solution to this problem, i.e. once we make up our mind about a precise and appropriate definition and the distinguishing criteria of dispositional properties, all other related problems will be automatically solved.

Dispositions are generally taken to stand for latent or non-occurrent properties of objects, but the occurrent-dispositional dichotomy breaks down very easily. If dispositional properties are thought to be conditional-entailing or about which some minimal conditional ascription can be made, then simple sensory qualities like colour, shape, etc. also turn out to be dispositional.[20] If dispositions are construed as mere tendencies to behave in a specific manner under specific circumstances, then they become equivalent to possibilities or potentialities and cease to be anything real. But acquiring a potentiality is definitely an actual property, even though not a categorical one. It seems, therefore, that at the moment we can at best provide a negative definition of dispositional properties by pointing out that dispositional properties are those which are not categorical. But now the onus of specifying categorical properties falls on us. The categorical properties are those properties of an object which make the object what it is, and it is a legacy of John Locke to call the properties that make 'the object what it is' the primary qualities of an object. A thing, by virtue of its primary qualities, possesses some powers to produce secondary qualities like colour, etc, by acting on our sense organs and also to produce tertiary qualities which affect other objects in a specific manner, e.g. the power of the sun or fire to melt wax. According to Locke, these powers are not the causes that bring about changes in other objects. But the properties which are the grounds or bases of these powers are partial causes, if not wholly responsible for affecting other objects in a specific manner. Now, we think, it is clear to everybody why the realists uphold, in the first place, that a dis-

position must have some categorical basis, and also identify the disposition with the underlying categorical properties. The rationalists also could not outgrow the influence of Locke, and that is why they treat dispositions as powers.

We also think that the most plausible way to distinguish between categorical and dispositional properties is to suggest that this distinction runs parallel to the distinction drawn by Locke between the primary qualities, on the one hand, and the secondary and the tertiary qualities, on the other. We, therefore, maintain that Locke's list of primary qualities coincides with our list of categorical properties, and all other properties are to be treated as dispositional. The plausibility of our suggestion will augment, if we examine the problem from the viewpoint of a physical scientist.

If we begin at the beginning, then the first question to a physical scientist is: what matter is. By definition matter, as opposed to energy (and which by the way are inter-convertible), is something that has a spatio-temporal extension and possesses mass. The next problem is; how do we identify and know the various kinds of matter? The scientist replies by examining their properties. Let us take the problem of identifying an unknown substance and determining its composition in terms of various elements. The scientist would first study what we may call its gross physical properties, to the extent these are applicable, like colour, shape, transperancy/opacity, hardness, specific gravity, malleability, ductility, elasticity, etc. followed by a study of its microscopic section and its chemical reaction by treating it with various reagents and finally come to a unique solution. The scientists may agree to classify these properties into two: (*i*) the fundamental and defining properties of matter which are spatio-temporal, extension and mass and (*ii*) the general properties which include secondary and tertiary qualities. A specific substance is always defined in terms of its molecular structure which includes both its molecular constitution and its molecular arrangement. All the primary qualities mentioned by Locke can be found within this molecular structural set-up. A molecule, in its turn, is constituted by its atomic structure and the atomic structure, in its ultimate analysis, will depend on the number and arrangement of electrons, protons and neutrons constituting the atom. The elements of the subatomic level also show regularity in their behaviour. This also may be traced to the quarks, etc. Now if the scientist is asked why a quark or whatever may be the name of the ultimate simple unit behaves in the way it does, he will have to answer that it just does so because of its nature. So, there remains scope of controversy regarding intrinsic features of the elements of the subatomic level. Thinkers like Mackie maintain that the intrinsic properties of electron, etc. are categorical, whereas Robert Cummins, Harré and few others contend that they are dispositional; and we are to admit some brute dispositions in the long run. But, as these features of electrons, etc. make these elements what they are, let us concede that these intrinsic properties are categorical. Even then we shall not be able to identify the dispositional

properties of an atom with its structure. For an atom, depending on the number and arrangement of its components, comes to possess some emergent properties by virtue of which it behaves in a specific manner. Thus, if we proceed higher up the 'escalier' and concentrate on any specific object, we shall find that, because of the molecular structure of that particular type of object, it possesses some emergent properties which were absent in the molecular stage. These emergent properties like colour, hardness, malleability, etc. are dispositional properties.

A suspicion might arise that even in our analysis the categorical-dispositional distinction breaks down at the ultimate level. We would like to assure those critical minds that such an anxiety is really unwarranted, for the ultimate in the subatomic level is either structured or unstructured. If it is structured, then our analysis will follow the previous pattern. If, on the other hand, it is unstructured and its inherent properties are treated as categorical, there still remains scope of its possessing certain dispositional properties when its categorical properties interact with its environmental conditions.

We may, therefore, conclude that dispositional properties are real, intrinsic properties of objects; but these properties alone cannot explain the specific behaviour of the object even with a proviso of *cateris paribus*. Dispositional properties cannot play the role of cause or the completing condition in a causal situation, but they definitely fill in certain gaps as one of the conditions of the whole causal set-up. Dispositional properties may not be manifested all the time. The events that are generally thought to be manifestations of dispositions depend for their origination on various factors, viz. the molecular structure of objects, the emergent properties or dispositions as well as the external circumstances including environmental conditions.

In spite of us and our way of distinguishing between dispositional and non-dispositional properties, there will be no dearth of philosophers who will unhesitatingly obliterate this distinction and denounce dispositional ontology as trivial or redundant. To them, we will say with J.H. Fetzer (1977): 'For ontology, a world of disposition is world enough.'[21]

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F.A. Hayek on social justice

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F.A. Hayek, the Nobel Prize winner economist and social philosopher, in his second volume of *Law Legislation and Liberty*[1] published in 1976 under the title, *The Mirage of Social Justice*, has mounted a vary powerful attack on the notion of social justice. He has developed the following main arguments in it to criticize the notion of social justice.

First, justice is primarily 'an attribute of actions'. According to Hayek: 'To apply the term "just" to circumstances other than human actions is a category mistake'[2] (p. 31). The terms 'just' and 'unjust' can be applied to 'states of affairs' secondarily, only when they are the 'intended or foreseen' consequences of action. And 'if it is not the intended or foreseen result of somebody's action that A should have much and B little, this cannot be called just or unjust' (p. 33). The judgments of justice or injustice of states of affairs logically depend on those of justice or injustice of actions, of which they are the intended or foreseen consequences. The judgments of justice or injustice of states of affairs cannot be arrived at independently of the prior judgment of justice or injustice of actions. In fact, according to Hayek, if a state of affairs is an intended or foreseen consequence of a just action, then it is just; and if it is an intended for foreseen consequence of an unjust action, then it is unjust. The judgments of justice of actions are arrived at independently of the justice of the states of affairs they give rise to, since Hayekian rules of just conduct are denotic entitlement principles which delimit protected domains not by directly assigning particular things to particular persons, but by making it possible to derive from ascertainable facts to whom particular things belong (p. 37). The proponents of social justice, argue Hayek, not only raise questions of justice of the states of affairs which are not intended or foreseen consequence of any persons' actions but also try to arrive at the judgments of justice of states of affairs, independently of the statements of justice of actions, by looking at the pattern of distributions of things only; and thereby they are making the concept of social justice completely meaningless.

Secondly, the notion of social justice is inapplicable to societies which rely on genuine market order for solving its economic problems. For 'a genuine market order...does not and cannot achieve a distribution corresponding to any standard of material justice...' (p. 81).

Thirdly, it is impossible to design a social order which can satisfy the requirement of social justice. For, in such societies, it is inevitable that some people will be assigned by the system to do work they do not want to do, which is injustice to these persons.

Lastly, according to Hayek :

> ...the demand for "social justice"...becomes a demand that the members of society should organize themselves in a manner which makes it possible to assign particular shares of the product of society to the different individuals or groups. The primary question then becomes whether there exists a moral duty to submit to a power which can co-ordinate the efforts of members of society with the aim of achieving a particular pattern or distribution regarded as just' (p. 64).

And, of course, Hayek's answer to this question is in the negative.

II

The above-mentioned four arguments do not appear to clinch the issue against the notion of social justice. It is an undeniable fact that the appeal to the idea of social justice requires a rethinking about traditional notion of justice, for the traditional notion of justice could not have been the notion of social justice. The reason is that the ideal of social justice requires a kind of agency in an area where there was no agency. The belief that revolution can bring about a desired distribution of values in society is just as old as Marx. The belief that instrumentality of taxation can be used for redistribution cannot claim antiquity beyond the present century. The feasibility of centralized planning to achieve a desired pattern of distribution of values dawned on mankind only after the Bolshevik Revolution. The claim that the notion of social justice is incoherent or meaningless, because it involves an extrapolation of our common ideas of justice to a point outside the situation which make them applicable, is nothing but a claim that the rethinking alluded to above is paradoxical or impossible. But is it so? Can't we raise the question of justice of states of affairs, even if they are not the intended or foreseen consequence of anybody? Can't we raise the question of justice of states of affairs when they can be ameliorated, even if they are not the intended or foreseen consequences of anybody's action? The answer appears to be that we can. We can blame government for inaction, for the injustice they help in perpetuating even if nobody is responsible for bringing about that injustice, when we see that government can remove that situation. similarly, can't we make justice judgments about states of affairs independently of the justice of actions which bring them about or help in perpetuating them? Most, if not all, major theories of justice like utilitarianism, egalitarianism and justice as fairness answer the question in affirmative. So the question is not that of meaningfulness of application of term 'just' to states of affairs when they are not the intended or foreseen consequences of anybody's actions; or the meaningfulness of judgements of justice of states of affairs arrived at independently of the judgments of justice of actions, of which they are the intended or foreseen consequences. Rather, what is at stake is the desirability of social actions to ameliorate the unacceptable states of affairs when we can do so, even if they are not the intended foreseen consequences of anybody's action; and the desirability of a pattern of distribution of values over positions in society.

Even though rethinking of traditional notions of justice is involved in the notion of social justice, it is not as radical as the case is made out to be. We have to make distinction between the distribution of goods to positions and offices and the distribution of goods to persons. These two distributions need not coincide as a person may occupy more than one position, or shift from position to position and may even fail to occupy a position. Social justice advances principles for the pattern of distribution of goods to offices and positions in society. The question of proper distribution of goods to persons is treated as a question of pure procedural justice without providing any specific pattern of distribution as the end, providing only procedural rules of entitlement to persons.[3] So, looked at from the point of view of the individual, justice of his share depends on the rules of entitlement, i.e. the traditional notion of justice is still valid. But now we realize that these norms are neither God-ordained like ten commandments nor binding on us due to tradition but are valid because there is a consensus to uphold them; and they can be changed by social actions if the consensus is disturbed to arrive at a new consensus. It is here that the notion of social justice has been advanced to play the crucial role. It is the principle of social justice which is advocated to assess the desirability of maintaining or modifying the social rules of entitlement to which individuals have to conform. Hence the notion of social justice involves rethinking about traditional notion of justice to the extent that it urges us to assess afresh the rules of entitlement. But it is not radical enough to reject the role of rules of entitlement in assessing the justice of individual actions of persons. So what is at stake between the defenders and critics of the notion of social justice is the desirability of assessing and, if necessary, desirability of modifying the rules of entitlement by social actions on the basis of the overall state of affairs they give rise to, or the distribution of values they bring about over position and roles. Defenders of the notion of social justice argue for the desirability of assessing these rules on pattern of distribution of values they lead to, while the critics find this task as paradoxical.

It is the failure to keep this distinction between the distribution of goods over persons and distribution of goods over positions which has led another critic of social justice to argue: 'Justice is not a forward-looking virtue. Justice consists in some appropriate relationship between what a person has done or what he is now and the benefits that he receives or the costs that he bears.'[4] It is true that the justice of distribution of goods to persons cannot depend on forward-looking principles. They have to be non-forward-looking principles, only looking at past actions of persons. But principles of just distribution of goods to positions have to be forward-looking ones; and these cannot be principles in terms of past performance of persons occupying the positions,

since the structure of society and the positions in it have to be evaluated in terms of their effect on society.

III

Hayek is quite correct when he says: '...a genuine market order...does not and cannot achieve a distribution corresponding to any standard of material justice.' But taxation can be used to correct the maldistribution. In fact, there is no society which has market and which does not use taxation for redistribution. Of course, taxation will interfere with the efficiency of the markets. So the question is: should efficiency be sacrificed for achieving social justice? Critics say 'no', while the defenders of social justice say 'yes'. Not only that there is nothing sacrosanct about market institution. It is maintained by the force of the state and can be given up for centralized planning to achieve social justice. So the inconsistency between the notion of social justice and the efficiency of markets is not an argument against social justice. Rather, it forces us to face the question whether we should preserve the markets or should we interfere in it or give it up to achieve the desired pattern of distribution, even at the cost of efficiency.

It is interesting to note that a familiar line of attack that used to emanate from Hayek, taking cue from Von Mises, on the possibility of economic arrangement without market, was that it is not practically feasible. It is only when Lange and Taylor have successfully demonstrated the feasibility of non-market economic arrangement that Hayek has changed his line of attack from infeasibility to meaninglessness of social justice. He writes in the Preface: 'In the circumstances I could not content myself to show that particular attempt to achieve social justice would not work, but had to explain that the phrase meant nothing at all' (p. xii). I resist my temptation here to aruge: if the phrase 'social justice' meant nothing at all, infeasibility of what was being shown by him?

IV

The notion of social justice advocated is, in fact, a social-ordering relation, whether it is utilitarianism, egalitarianism or justice as fairness.[5] So it is not the case that a state of distribution is either just or unjust. Rather, states of affairs can be compared on the scale of justice so that one may be more or less just than or equally just as the other, without any of them being perfectly just or unjust. When alternative systems are proposed, they are not proposed as perfectly just but as more just than the present system. Hence in the proposed alternative system there may be injustice but less than the existing one. Hence when Hayek claims that there will remains injustice in alternative system, he does not succeed in proving that the alternative is not better than the present one.

In systems alternative to markets, claims Hayek, some people will be forced to do work which they do not want to do and this is injustice. Doesn't this happen in markets? Aren't persons forced to change their occupations when the preference of consumers changes or the demand for the occupation ceases in the face of starvation? Is the suffering any less when the force is the outcome of countless anonymous consumers' decisions rather than a single identifiable agency?

V

Hayek has rightly pointed out that the notion of social justice presupposes an organizational model of society when he says: '...the demand for "social justice" becomes a demand that the members of society should organize themselves in a manner which makes it possible to assign particular shares of the product of society to the different individuals or groups.' The chief features of a organizational society are goal-orientation and conscious rational co-ordination of activities of individuals to achieve the goal of social justice. But, unfortunately, at present no societies, except some primitive ones, can be called genuine spontaneous societies, which are the natural outcome of individuals' interactions to achieve their diverse personal goals without any overpowering social goals and which have no all-powerful and knowledgeable planner to co-ordinate their activities. There is a discernible move towards transforming the societies into organizations as the scope of governmental activities increases due to increase in our knowledge of social engineering. Champions of social justice welcome these changes as desirable if the social justice is the goal of society. Hayek sees these changes as undesirable even if it is for achievement of social justice. According to him, persons have no moral duty to submit to a power which can co-ordinate the efforts of members of a society with the aim of achieving a particular pattern of distribution regarded as just; for societies cannot be transformed into organizations without loss of freedom. Which liberty is at stake here? It is the freedom to alienate and exchange property. But, as we painfully realize, it is nothing but liberty to take advantage of the others' necessity.

Can this freedom be accepted? So far no cogent defence has been given to justify the liberty to exchange and alienate property. It may be claimed: didn't Locke argue that persons have a right to life, and hence the right to means to life, and this right is insecure unless a person has a right of ownership over means of life?[6] Since the liberty to exchange and alienate one's possession is a necessary consequence of the right to ownership, didn't he succeed in establishing liberty to exchange and alienate possession by the argument mentioned above? In fact, the validity of Locke's argument is undermined by the way it stated. What follows from the premises is the right to exclude others from the means to one's life, the limits of which were established by Locke in subsequent arguments in his *Two Treatises on Government*.[7]

This right to exclude others from the use of a thing can be secured by right to possess or right of tenancy over it. This right is transformed into ownership by Locke by simply assuming that all men are in 'a state of Perfect Freedom to order their actions and dispose of their possession, and person as they think fit' without any argument to support.[8] Hence one cannot appeal to Lockean argument to justify the liberty to exchange and alienate possession, because Locke has no arguments to offer in support of it.

Rawls tried to show the justice of private ownership of property, and hence the justice of the liberty under question by showing its consistency with his principles of justice. But examination of Rawls's argument shows that he failed in this task.[9]

VI

Why is the organizational model of society seen as a danger to liberty? It is the idea of conscious rational co-ordination of individuals' activities which is seen as a threat to liberty. But the co-ordination required by the goal of social justice is limited. Co-ordination is required in respect of certain things a person does but not in respect of all his actions. The limit of individual freedom will be decided by the goal of social justice and the specific conception of it: So the fear that rational co-ordination will lead to totalitarian society is unfounded.

The liberty which needs to be restricted for social justice is the liberty to hold and exchange property. This liberty is independent of other liberties like political liberty and liberty of conscience and thought.[10] There have been totalitarian regimes with economic freedom, and, as the champions of liberal socialism argue, there can be liberal societies without the freedom to hold and exchange property.

Notes and References

1. The first volume of *Law, Legislation and Liberty* was published in 1973 under the title *Rules and Order* by the University of Chicago Press, Chicago.
2. References in the parentheses are to *The Mirage of Social Justice*, the second volume of *Law, Legislation and Liberty*.
3. This distinction corresponds to the distinction between distributive justice and allocative justice in John Rawls's *A Theory of Justice*, Oxford University Press, London Oxford, New York, 1972, p. 88.
4. Barry, Barian, 'On Social Justice', *The Oxford Review* (1967), as quoted by B.A. Brody in *Beginning Philosophy*, Prentice-Hall, Inc., Englewood Cliffs, New Jersey, 1977, p. 71.
5. See John C Harsanyi's 'Bayesian Decision Theory and Utilitarian Ethics' in *The American Economic Review*, vol. 68, no. 2, May 1978, pp. 223-28; 'Morality and the Theory of Rational Behaviour' in *Social Research*, vol. 44, no. 4, Winter, 1977, for utilitarianism; Amartya Sen's *On Economic Inequality*, Oxford, Clarenden Press, 1973, for egalitarianism; John Rawls's, *A Theory of Justice*, for justice as fairness.

6. Locke, John, *Two Treatises on Government* (ed. Peter Laslett), Cambridge, Cambridge University Press, 1960, pp. 304-5.
7. *Ibid.*, pp. 305 ff.
8. *Ibid.*, p. 287.
9. See Agarwala, Binod Kumar, 'Private Ownership of Property and Rawls's Theory of Justice', *Journal of Indian Council of Philosophical Research*, vol. i, no. 2, Spring 1984, pp. 93-104.
10. *Ibid.*, p. 101.

Wittgenstein: a second look*

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Introduction

I do not intend these lectures to go as (not even mortal) contributions to *Wittgenstein-studien*. (This, however, ought not to be news to those who are familiar with what I had said about Wittgenstein's thought two decades ago—that is, before Wittgenstein exegesis turned into a capital-intensive and cost-ineffective large-scale industry in the Anglo-American world in which is engaged a large labour force.[1]) On the contrary, I intend these lectures, which are being produced in the style of a cottage industry, to throw some light on the fecundity of Wittgenstein's thought which, despite the truck-load of the exegesis, still remains hidden.

The style of production I opted for (here as well as in all of my other writings) redeems me—and I trust, you too—from the morally damaging, mentally dissipating, and financially disastrous burden of taking into account all that tenure-geared hard-bound effluence from Anglo-American presses or the IBM-Xerox micro-filmed exuberance of juvenile academics (which costs, at the current market rate, five paise for four words-counting punctuation marks, that is, and at the stable moral price, a thorough battering of our being and becoming).

As I am not born out of the collected works of any philosopher, not even Wittgenstein, I consider much of his posthumously published work as not sufficiently significant to be taken into cognizance. (I do believe that Wittgenstein himself thought so; otherwise nothing in him would have restrained him from getting it out under pads and in print.) Yet, in my philosophizing I did, and still do, incorporate a bit of Wittgenstein, not because I am bewitched by him or his thought, but because no philosopher—not even Wittgenstein—ever invented his entire conceptual battery. As such, in these lectures you may get a little more of my thought—a part of it which, in some sense is Wittgensteinian, that is—and a little less of Wittgenstein's thought. If you are disappointed on that count, that is, if you feel that what I would be putting into these lectures can by no stretch of imagination be categorized as Wittgensteinian, well, then I would be delighted; for then you will be the right sort of philosophers with whom I can, and should, share one of my beliefs. No philosopher can either accomplish or afford an uncritical borrowing from another philosopher,

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whatever might be the stature of the latter; that is the privilege of scholarly cataloguers or pedlers of philosophers. So, if you are disappointed with my thoughts for their not being unqualifiedly Wittgensteinian, you may treat these lectures not as clarifications of Wittgenstein's *thoughts* (only industrious idiots can assiduouly annotate torturous texts of thinkers that are dead), but as variations or even elaborations and embellishments of Wittgensteinian *themes*. For a philosopher —any philosopher, in the strict sense of the term— other philosophers are what the characters of a novel are to its author. In the interests of his creative demands, he makes them say and do what he wants them to say and do; he determines what they are, and not the other way round. Not even those six characters in search of an author could find one in Pirandello. That is why authentic interpretations of a philosopher are not philosophical; and philosophical interpretations are rarely authentic. Philosophical interpretations of a philosopher are basically creative. And creativity requires some distortion, even some subversion. Aristotle's Plato is not Plato's Plato, Hegel's Kant is not Kant's Kant; maybe the Wittgenstein I am presenting to you is not Wittgenstein's Wittgenstein; he may not even be the Wittgenstein of the Wittgensteinwallas. It does not matter, for all that I would like to claim is that he is somewhere in the lineage of Wittgenstein. And if you doubt even this (if you are not convinced that I could sustain my minimal claim even, that is), then you may—as you need to—credit whatever is philosophically interesting in these lectures entirely to me; and I will take the responsibility of defending it.

I shall devote the first lecture to analyse the Wittgensteinian concept of a *name*; and I shall attempt it by focusing my discussion on 3.203 of the *Tractatus*. In the second lecture, I shall try to understand what Wittgenstein means by *natural history*, and how he uses this concept to handle many important issues in philosophy. Thus this lecture may be treated as a decoding of 415 of the *Investigations*, part I. In the third lecutre, I shall try, using the results arrived at in the first two lectures, to understand 5.526 of the *Tractatus*. Thus another telling title for this series of lectures would be: Naming, Natural History, and Generality. But as I preferred to give it one with a pinch of personal touch, I let the three lectures share this one equally. Finally, for the convenience of the reader, I may quote the three passages from Wittgenstein's writings that I propose to understand in these lectures; the first passage is translated by me, and the second and the third are translated by G.E.M. Anscombe, and D.F. Pears and B.F. McGuinness respectively:

(1) A name refers to an object, and the object is its referent. ('A' is the same as 'A'.) 3.203, *Tractatus*.
(2) What we are supplying are really remarks on the natural history of human beings; we are not contributing curiosities however, but observations which on one has doubted, but which have escaped remark only because they are always before our eyes. 415, *Investigations*, I.

(3) We can describe the world completely by means of fully generalized propositions, i.e. without first correlating any name with a particular object. 5.526, *Tractatus*.

1. On Naming

If he is right we are forced to think afresh.—THOMASSO COMPANELLA

I have only despair concerning the interpretations and translations of 3.203 of the *Tractatus*. After all these sixty years since it has been first translated into English, and twenty years after since I suggested an alternative, and after a whole library has been written by the interpreters of, and the commentators on the *Tractatus*, I have come to believe that as it is not given to others, to see the issue my way, I must be the confused one. So I thought I should, at least, succinctly but clearly, state at least one of my confusions regarding that remark. (I refrain from using 'proposition' for nature has not bestowed on me the ability to comprehend what that term means.)

3.203, in the original, reads as follows:

Der Name bedeutet den gegenstand, Der Gegenstand ist seine Bedeutung. („A" ist dasselbe zeichen wie „A".)

Since my 1961 doctoral dissertation, I have been reading this, and also have been (in vain, as I see now) impressing on others to read this, as

A name refers to an object.
The object is its referent. ('A' is the same sign as 'A')

and *not* as it figures in either of the translations into English, (The difference between these two translations regarding this remark is exhausted in the use of an indefinite article in one and the definite article in the other.)

The 1961 translation puts that remark into English as

A name means an object. The object is its meaning. ('A' is the same sign as 'A'.)

and this is likely to mislead (as it indeed did, like the 1922 translation) the reader to believe that Wittgenstein was suggesting that meanings are *entities*, that is, that Wittgenstein was a Meinongian of a sort. But this is contrary to the intentions of Wittgenstein; it is contrary to the spirit of the *Tractatus* too. He was, in the *Tractatus*, trying to hit at a semantic analysis which is free from meinongian affiliations and which can be found in Russell's writings on the issue from the *Principles of Mathematics* to the *Principia Mathematica*) (Each of the semantic notions which Russell rejected during this period—and rejected it imputing to it either to Meinong or to Frege—is, indeed, the one

which he himself entertained at sometime or other at an earlier date. As dramatic irony would have it, at one time during this period Meinong himself thought that Russell was the best representative of his thought that he ever had in the English-speaking world. Wittgenstein, on the other hand, was not only sceptical about Russellian semantics, but was also critical of Fregean semantics which, as he seems to have thought, indulges in reification and multiplication of semantic categories like *proposition*, and *concept* (that is, the 'sinn' of a sentence, and the 'sinn' of a name respectively). His continuous struggle, from his first encounter with the *Principles* of Russell to his completion of the *Tractatus*, was to work out a semantic theory which does not succumb to the obvious unpleasant traits of Fregean and Russellian theories. As such he had to take a radical departure from the Fregean style of doing semantics; and he did it using the conceptual battery of Frege, however.

To work out a semantic theory means the same as to work out first a criterion by means of which we can explain how a syntactically well-formed expression (that is, a sentence or a word) has a 'meaning' and how to elicit the meaning of a meaningful expression. Second, it is to work out a criterion which would enable us to pin-down the conditions under which an expression which has a semantic property, like being true or being false, comes to have that property. This is to say that a semantic theory is geared to provide a criterion of meaning, and a criterion of truth (of course, in addition to providing a link between these two criteria). As the latter criterion falls beyond the bounds of my present concern I will not touch upon it.

In the above paragraph I kept the term 'meaning' in double quotes not merely to indicate that it is, as it has been, a source of confusion—rather the source of a confusion—but also to suggest something else that may not be all that evident. So let me spell it out in some detail. There is a point in saying that in asking what the meaning of a sentence S was, we are not raising an issue *in* a semantic theory. The corresponding interrogative does not figure in a semantic theory, for it is in response to that and similar interrogatives that a semantic theory comes into being. Of course, *within* the semantic theory there will be an indicative sentence correlatable to that interrogative, and which can be treated as a plausible or an implausible answer to it. Such a sentence *may* take either of the following shapes

(1) The meaning of S is...
(2) S' meaning is...

where S is used autonymously, as in this case itself, It is highly desirable to formulate one's semantic theory such that the very same comes out as

(3) S' ϕ is...

again using S autonymously, and where ϕ is an expression of the semantic

theory but is not equiform with 'meaning'. On the other hand, if one casts his semantic theory such that it contains expressions of the form (1), then the least one can and need to do is, to preclude confusions, that is, explicitly to differentiate 'meaning' as it occurs in expressions of the form (1), and 'meaning' as it occurs in the interrogatives of which these expressions of the semantic theory are presumed to be answers. Occurrences of the latter sort encapsulate our pre-systemic and intuitive meaning of 'meaning', and occurrences of the other sort are intended to capture systematic and constructive meaning of 'meaning', So to say, in these two sorts of occurrences 'meaning' is equiform all right, but it is also equivocal.

In expressions of the forms (1) and (2) that is in its systemic and constructive use, 'meaning' does not mean any more than what can be specified in terms of that which goes into the blanks in them; and—as it will be evident from what follows—this may not be the case with the pre-systemic and intuitive use of 'meaning'. (To bring out this difference to the fore in our talk, i.e. our philosophical talk, about meaning, we may use two different expressions, say, 'C-meaning', and 'I-meaning'.)

The harbinger of semantic analysis, Frege, did note this difference (see Dummet's Sleep Inducer). Though he noted it, he could not use two different (that is, non-equiform) expressions reserving one for 'I-meaning' and the other for 'C-meaning'; this is the case with the crucial passages in his writings. The cardinality of this semantic sin is not due to his inadvertancy (that was not his virtue) but is intrinsic to the language he was using as his final meta-language, that is, German. Yet, the obvious confusions are precluded by him by resorting to careful and elaborate explanations of the way he intended to use his theoretical expressions in his semantic system. 'Sinn', as it occurs in ordinary German, may be well translated into English as 'meaning'—I do not stake on that as I am equally poor in those two languages—but I am sure that 'Sinn' as it occurs in Frege's semantic analysis cannot be translated as 'meaning', unless and until the same amount of pain is taken to systematize and delineate the use of that word so as to make it capture the technical sense that Frege gave to 'Sinn'. But such a task is needlessly tortuous to any one doing semantic theory using English as his ultimate meta-language, for one can use 'meaning' in the contexts of 'I-meaning', and 'sense' in the contexts of 'C-meaning'.

The central feature of Frege's semantic analysis is that the universal class of expressions is semantically homogeneous in the sense that each expression first has a *sense*,[2] and next has a referent. Thus, his is a twin-function semantics. A sentence expresses its *sense*, and refers to a *truth-value*. Similarly, a name expresses a *sense*, and refers to an *object*. The *sense* of a sentence is the proposition it expresses, and the sense of a name is the concept it expresses. These can be characterized (strictly speaking, named), where S and N are a sentence and a name respectively, as '*that S*', and 'of being N'. This sort of providing semantics, apart from the intractable problems that it poses in link-

ing the *sense* of an expression with its referent or the intriguing manner it treats epistemic contexts, does either issue in infinite regress or else end up in reification.

For—ignoring names for a while—let us take two sentences S and S*, one belonging to, say, the English language and the other belonging to some other language in which we have fair enough proficiency—at least as much as is required to be able first to consider whether, and then decide that, S* in that language is a correct translation of the English sentence S. The explanation of S and S* being synonymous (i.e. of their having the same meaning, to speak intuitively) is to be carried in terms of the sentences expressing the same *sense* (proposition). This *sense* can be referred to either by the nominalized version of S—i.e. by "that S"—or by the nominalized version of S*, say, 'S*n*'. Intuitively we know '*that* S' and 'S*n*' are the same in their meaning. The issue is: how are we, within the frameowrk of Fregean semantics, to account for this intuitive certainty? Further, how are we to account for it without resorting to an invocation of intangible entities (resorting even to a third world), or even reconciling to an infinite regress? Accounting for the intuitive certainty about the sameness of the meanings of S and S*, in terms of the identity of the *senses* of '*that* S' and 'S*n*', will issue in another instance of the same problem; and accounting for it, in terms of the identity of the referents of '*that* S' and 'S*n*', results in entification.

The analytical ontology, and the semantic analysis of the *Tractatus* are consciously designed as alternatives to Fregean semantics and the fascinating (nonetheless, fantastic) ontology it requires. Whether this was done in full view of the difficulties involved in the Fregean framework, or only with a partial vision of it, is not the issue here; who can tell what transpired in the mind of a thinker after he has been buried! But in what Wittgenstein left to posterity, especially the *Tractatus*, there is more than sufficient evidence to confirm what I remarked about the design behind his attempt at a fresh semantic analysis. Contra Frege, Wittgenstein held that the class of expressions is *not* a homogeneous class; on the other hand, as he saw it, it is composed of two mutually exclusive and jointly exhaustive subclasses of expressions, such that each of these subclasses is semantically homogeneous.

The universal class of expressions, obviously, is determined by syntactical rules (and not so obviously, by syntactical rules alone); and there is no semantic property or function determining the universal class of expressions—there is no semantic role which each and all members of this class would perform. *Only* sentences have senses.

3.3 Nur der Satz hat Sinn...

(and *not*, for reasons that should be obvious by the end of this enquiry, as in the English translations, i.e. 'only propositions have sense'. If the *sense* of a sentence is the proposition it expresses, what I wonder the sense of a proposition could be! I cannot imagine how we can pack all those things in the small tins that our minds are.) And *only* names have referents. Sentences,

unlike names, do not have referents, and names do not have *senses*.[3] I will try to offer a minimal clarification as to how this (presumably) obtains. Names are primitive signs; they are the basic referring expressions. This means that the possibility of linguistic representation of the world is contingent upon names having direct reference to the objects that form the substance of the world. In any recursive characterization of the referential mechanism of language, the referring of names will have to figure as the initial step, and *not* either *in* or *as* the inductive step. Hence

3.26 A name cannot be dissected any further by means of definition.

Suppose, for a while, that they are not all that basic at all, that is, assume that the primacy of their referring is not that fundamental at all, in the sense that it does not constitute, so to say, the transcedental condition for the possibility of linguistic representation, then—and only then—it would be possible for names to have *senses*, that is, they can be defined in terms of other kinds of expressions. If names are so definable, then their reference is indirect and is derivative of the direct reference of the expressions occurring in their respective definitions. But this is *not* what obtains in our everyday language.[4] (That it does not obtain in our language is s sufficient reason to conclude that what we assumed does not constitute the transcedental condition for linguistic representation, for such a condition must also be, at the same time, the condition satisfying which our everyday language does represent the world. In fact, such a condition should be constitutive of our language; but, and that is the point of Wittgenstein, it is not a constitutive rule of our everyday language.) Despite the fact that '(t)he conventions on which the understanding of everyday language depends are enormously complicated (4.002)', this much is certain, namely, that names refer directly is one of the those conventions; so is the convention that all other referring expressions refer only indirectly by being related to names, that is, that their reference can be defined (or elucidated) in terms of the reference of names.[5]

This, however, does not mean that we cannot think of the other way round being a convention of language—some language, that is. Only that would not be our language, for in thinking of such a (possible) language, and in imagining the semantics of that language, or in envisioning the way we could possibly map that language onto our language (that is needed for our being able to make sense out of any expression of that language), we will be forced to a point where we may have to semantically restructure our language, that is, a point where we will have to restructure our experience itself. This is so because the conventions that constitute our language enabling it to represent the world not only give 'meaning' to discourse, but also contain the possibility of representing the world; they are, in a sense, tools of discovery, they enable us to discover something about the world. Thus, in imagining such a language, we are imagining a new 'epistemological form of life'. And in that exercise, however tempting it might be to indulge in, our received

epistemological form of life and our everyday language will have no role to play. So to say, in that activity we will be bracketing our form of life and our language and consigning them to a causally inefficacious blackhole like background. Thus, in thinking of a new language, even an ideally ideal one, we will not be attempting to understand the referential mechanism of our language; on the contrary, we will be forcing it to idle.

Even if a language, so imagined, is somehow (but erroneously) treated as an ideal one, it does not follow that it is a paradigmatic one from the point of view of which we need to evaluate, let alone restructure, our language in any legitimate senses of 'evaluation' and 'restructuring'. For, as Wittgenstein notes in *On Certainty* (475), any language good enough for communication, 'even primitive means of communication', is good enough, and needs no apology from us'.[6] That is why we can warrantedly believe that each sentence of our everyday language, as it is given to us, is in perfect order.

> 5.5563 In fact, all the sentences of our language, just as they stand, are in perfect logical order. That utterly simple thing, which we have to formulate here, is not an image of the truth, but truth itself in its eternity. (Our problems are not abstract, but perhaps the most concrete that are there.)

Not to lose sight of the wood while wandering in the bush, I should return to the point at issue. In our language we do fling names onto objects directly. Thus a name comes to refer, 'on its own', to the thing onto which it was flung (3.261). Then a name refers to an object—the object to which it does refer—'independently', names are autonomous in their semantic behaviour. It might be, as often it is, the case that we fail to note what indeed the referent of a name is; we fail to hit at the convention (note, Wittgenstein considered 'This is N' as a statement of a rule) which marries off monogomously a specific name with a particular object whence an elucidation may be in order. But no such elucidation will be a definition, firstly, because such an elucidation will contain the name concerning which the elucidation is being offered (3.263). 'This is N' contains 'N' in a more important sense than 'Wittgenstein' contains 'Wit'. Anyhow, indeed as anyone who thought like Wittgenstein might have noted, 'Wittgenstein' does not—in so far it is a name, that is—contain 'Wit' at all. Secability is not a virtue of names, as much as it is not a virtue of objects. Or to use the scholastic lingo, names are not *anhomeoemerological*. 'This is N' contains 'N' in the sense that an understanding of the former complex requires an understanding of the latter component. Standing before somebody, and perhaps pointing my (accusing) finger at him, if I use my vocal organs to emit certain patterned sounds which, using the orthography of the English language, can be inscribed as 'This is N', and if you recognize that in this I have performed a speech act, then it follows that you have understood the sentence used in my speech act. This entails—and that is what Wittgenstein is hammering at—that you have understood that 'N' refers to the bloke

whom I pointed at. Thus, 3.263; a sentence can only be understood if the referents of the primitive signs that occur in it 'are already known'.

A name's referring to an object, and getting to know that it refers to what indeed does it refer to, are not to be conflated, for only expressions which have *sense* can be understood; what is understood is *sense*. So, getting to know what a name refers to requires sentential contexts, as

> 3.3 Only sentences have sense.

And only in a sentential nexus can a name's referring to what it indeed does refer to can either be fixed or elucidated.[7] But what is the sense in which sentences have *sense*? What, after all, is *sense*! What a sentence represents is its *sense*, says Wittgenstein (2.221); but what sentence represents is a fact, that also is what he says. Are, then, the *sense* of a sentence and the fact it represents the same?* If our answer is in the negative, we will have opened a mini Pandora's Box, or else we will have paved the way for Fregean semantics. In his attempt to refrain from making way for either of these, Wittgenstein is *not* identifying *sense* and fact. The world is not to be semanticized, so to say; it is to be left as it was, without entangling it in our willing, intending, wishing—even 'meaning endowing', in fact, from every lecherous design of subjectivists, romanticists, existentialists, and phenomenologists. And this as much as *sense* should be left to themselves without reifying or embedding them in a third world (which is already overpopulated). So what needs to be recognized is that.

> 4.031 Instead of, 'This sentence has such and such as a sense', we can simply say, 'This sentence represents such and such a situation.'

In view of this we can restate what we said earlier. Instead of saying that what we understand whenever we understand a sentence is its *sense*, we can as well say that—equivalently, that is—when we understand a sentence what we understand is that it represents such and such a fact. And—and that is important to note—the fact which a sentence represents is *not* its referent; facts are not named by sentences (3.144), only objects are named (3.221). As such

> 4.024 To understand a sentence means to know what is the case if it is true. (One can understand it, therefore, without, knowing whether it is true.) It is understood by anyone who understands its constituents.

Understanding a sentence, thus, is neither much more than, nor is short of, surmizing what the world would look like if that sentence were to be true, i.e. if that sentence were to agree with the world. This is same as to say that

*For some of the intriguing issues involved in this, see my 1977 paper cited above.

understanding a sentence is getting to know what obtains in the world—what would be the case if that sentence is true.* But to surmize that one needs to fix the objects which enter into a configuration constituting that case. This is the same as to say that one needs to know which are the referents of the primitive signs of that sentence—which are the names that go into the production of that sentence. From the fact that a sentence stands in representing relation to the *fact* that would obtain as a case if that sentence were to be true, and that it stands in that relation to the fact in virtue of the shared form, one should not conclude that noting this form itself is understanding that sentence. This form—which the sentence itself shows forth—is shared by that sentence in common with the fact that would obtain as a case if it were to be true, and *also* in common with all other facts which have that form. (After all, if your theory takes M as its model, it takes every M* that is isomorphic with M as its model).[8] Yet if we understand a sentence to be standing in representing relation to that and only that unique fact which would turn out to be the case when the sentence is true, it is due to the uniqueness of the reference which the primitive signs (i.e. names) that go into the production of that sentence do have; they uniquely refer to the objects, which are configured in that fact. Thus for understanding a sentence grasping its form is necessary but not sufficient.

In this, perhaps, I packed much, too much; so let me try to unpack at least two points which have direct bearing on the issue at hand, namely, how 3.203 is to be translated. One of the points is in relation to the dispensibility of senses, and the other concerning the non-arbitrariness of the relation between a name and its referent. It may be that *senses*, concepts, propositions, and their kith and kin, are required to explain the sameness of meaning of sentences. Now, let S and S+ be sentences of the same language of which we are intuitively certain that they mean the same; for example, sentences like 'Socrates is taller than Simmias', and 'Simmias is shorter than Socrates'. Let S* be a sentence of another language of which again, we are intuitively certain that it means the same as S and S+, for example, '*Sukrat Simmias se ooncha hai*'. Now upholderts of *senses* will argue that S and S+ are synonymous in one way, and S and S* are synonymous in another way. They might say that S and S+ are what they are because, though they express different propositions or *senses*, they have the same truth-value, and that S and S* are what they are because they express the same proposition, and also (because of it) have the same truth-value. If so, we can legitimately conclude that this sort of accounting for the synonymy of S, S+, and S* results in multiplication of the types of synonymy; that apart, it confuses—indeed, it is based on a confusion of—signs and symbols. They are, Wittgenstein would argue, the same sentence; the difference between S, S+, and S* is not in their symbolic aspect, but in their being different sentential signs.

*For an analysis of 'fact' and 'case', see my 1965 monograph cited above.

3.32 A sign is what can be percieved of a symbol.

As distinct sentential signs, they are the results of three different styles (modes) of production of signs. (Juxtapose before your 'mind's eye' the Arabic numeral for three, and the Roman numeral for three—do they stand for two different threes!) The apparent differences between them is inessential to their being the same symbol—being the same sentence. These inessential differences can be accounted for by taking into consideration script, orthography, empirical grammars, etc. And in their essence, that is in so far as they are symbols, they are the same; and it is only in so far as they are symbols that they stand in representing relation to the world.

3.34 A sentence possesses essential and accidental features. Accidental features are those that result from the particular way in which the sentential sign is produced. Essential features are those without which the sentence could not express its sense.
3.341 So what is essential in a sentence is what all sentences that express the same sense have in common.

Thus, in virtue of the elucidation regarding *sense* that I offered in the foregoing, what is essential in a sentential sign is what all sentential signs that represent the same fact have in common—all sentential signs, including those that are heiroglyphic, or quasi-heiroglyphic and quasi-orthographic like.

SOsi

We can, then, account for the sameness of meaning that we do frequently encounter in our everyday linguistic life by invoking only the distinctions between sign and symbol, mode of sign-production and mode of representation.

This, however, does not solve the problem, as the issue can be raised at a different level. As it has not been raised in the Wittgensteiniana till now, I will try to raise it, and also suggest a plausible solution within the framework of the semantics contemplated in the *Tractatus*. Suppose that we encounter a sentences *S* in some language which is not 'our' language, and yet because of our proficiency in that language we do feel certain—intuitively, that is—that S of 'our' language and *S* of that language mean the same. How are we to account for this in our semantic theory? Now let *S* be a sentence of, say, Quinish, that is:

For some x, for some y:x Socratises, y Simmiasises, and xy Tallerises.[9]

In S and *S* we have two sentences—signs which are two sentences also. Their discernible differences can satisfactorily be accounted for in terms of the distinction between sign and symbol; But what about the not so perceptible

difference! S and *S* stand in different projective relations to what they are supposed to be representing. This is to say that their modes of representation are at variance, just as two maps one using, say, zenithal mode of projection and the other conical mode of projection stand in projectional variation.

We are now going to tread on the verge of a much dreaded slippery slope on which mighty minds ended up with multiple fractures. So let us make sure what the issue is. There are those who are disinclined to entertain that there was a genuine issue here. For instance, Quine, who has no respect for propositions, and who perhaps has claims for native proficiency in Quinish, may even brush away our claims that S and *S* mean the same and that this sameness is intuitively given to us. To set us free from what he may treat as our epistemic self-deception, he may suggest his standard drug, namely, the radical intranslatability thesis. Though Wittgenstein never entertained the possibility of such a claim being an epistemological self-deception, Wittgensteinians might entertain that and invoke, in their support, a much quoted and much more misunderstood, remark from the *Tractatus*, namely, 5.62. If Wittgensteinians have not been tempted to indulge in that sort of a linguistic solipsism it is perhaps due to (in this case rather fortunately) a misleading rendering of that remark into English. The limits of my language 'refer' to the limits of my world; maybe even the limits of *my* language and the limits of *my* world coincide all right; but which is my language! Is it 'that language which alone I understand as the second translation into English puts it, or is it 'the language only which I understand' (more idiomatically, 'the language, which alone I understand', for what else is there to be understood, in the strict sense of the term)? When Wittgenstein wondered as to how much truth there was in (linguistic) solipsism, he was *not* lamenting that we, alas! were condemned to collective subjectivism. (That it is our destiny is the belief of Quine and his followers, not of Wittgenstein—though not all Wittgensteinians. The *socialwissenschaftheorists* have made a mockery of Wittgenstein's thought by making him sound like an undergraduate student of Garfinkel; the latter's ethnomethodology cannot be sustained on the count of Wittgenstein's views.) Further, what after all is the individuator of a language? Obviously, the rules of projection in accordance with which it represents the world. If so, our everyday language is not *a* language; it is a bunch of languages (for we do have, and operate with, multiple modes of projection. Our linguistic behaviour is like our social behaviour. We are members of many institutions.) If in our talk about our everyday language we do create the impression that we do seem to take it to be *a* language, there is nothing wrong with this, as we do have in our everyday language not only multiple modes of representation (and hence multiplicity of languages) but also rules to move from one to another that is, rules of translation too. That is why

> 4.002 Everyday language is a part of human organism and is no less complicated than it.

That being the case with our everyday language—that is, as we do use multiple languages to make multiple representations of the world—it does make sense, or it is perfectly legitimate, to talk of the sameness of meaning of two sentences with disparate projective rules. Do we not ask—on the strength of the fact that we do photograph, caricature, and do cartooning—how *this* cartoon and *that* photograph are what they respectively are *of the same person*. This implies that there can be (as there are) two such sentences which represent the same fact (or have the same sense), as there can be (as one can find in any good atlas) two maps of India using two different modes of projection. S and *S* are *two pictures* of the same fact, and *not* pictures *two facts* (as Quine, with tongue in cheek—I trust—would have us believe).

If I intended to gain anything in this (it is not a conclusive rejection of collective solipsism—I will attempt it elsewhere), it is a modicum of understanding of the way in which the *sense* of S is contigent upon, or is determined by the reference of the primitive signs that occur in it: But from what I have said till now, we may not be able, as that is rather insufficient, to hit at how the *sense* of the Quinish sentence *S* is determined by the reference of the primitive signs that occur in it. Apparently there are no names in *S*. Yes, apparently but not really. For when it is said that there are no names in *S*, 'names' is *not* used in its logical sense, or in its essential grammatical sense. (In that negative sentence 'name' occurs as a word of Metaenglish but not as a word of Metaquinish—certainly not as an expression of the metalanguage of the essentialish that we are talking about). The rules of the empirical grammar with reference to which we can say that there are no names in *S* are part of the rules of projection which are unique to the language in which S (and not *S*) figures as a sentential sign. In virtue of the rules of logical grammer of the essential language, 'Socrates' and 'Simmias' are names, not because they are nouns that are proper names (which is only a fortuitous feature of the English language), but because they are, in the English language (strictly speaking in a sublanguage of the English language) the most primitive signs in which we can recognize the most primitive symbols which are names referring to objects, and which by referring so enable that sublanguage of the English language to represent the world.

If all this has any upshot, it is that in order to net the primitive signs of *S* and understand the way in which their referents determine the *sense* of *S*, we need to surmize the way in which Quinish represents the world. If we look at the standard model theory for Quinish, we will note that the way in which the primitive signs of Quinish refer to objects of the model is essentially the same as the way in which names behave in the sublanguage of English in question and to which S belongs. This, however, is not to say that the mapping of Quinish on to its model is not more complex and complicated than the way the sublanguage of English in question maps itself onto its model; that is pretty obvious. Despite that, they are essentially the same in so far as they reach out to 'their models'. And on the count of the foregoing clarifications

and explications, it should follow that their models are the same; each of these sentences then reach out the same model—as Wittgenstein would say, reach up to reality—on different paths.

Earlier, I remarked that in their essential aspect, names are those signs whose reference figures in the initial (and not either in or as an inductive) step of a recursive characterization of the referential and representational aspects of language. It is true that, in a recursive characterization of the mapping of Quinish onto the world, the initial step takes care of its variables only; and these cannot, without being partial to the issue that is, be considered as names, for their reference does not have even a semblance of uniqueness.[10] Granted; but consider the class of expressions which are truth-bearers in Quinish. What does this class consist of? Only expressions which are quantified. This is to say that it is only quantified expressions (closed sentences) that agree or disagree with the world (model). Then, speaking in the terms of the *Tractatus*, only a quantified expression (and not an open expression, which is only a sentential schema) can have a *sense*, for having a *sense* is to be in agreement or disagreement with the world. And what are the essential referring components of a quantified expression? What are the primitive signs that occur in it? They are, obviously, bound variables. Now, compare the behaviour of a bound variable in a Quinish sentence, with the behaviour 'Socrates' and 'Simmias' in a sub-English sentence in which these two names occur as its primitive expressions, or compare it even to the behaviour of 'SO' and 'si' in 'SOsi', which is a sentence of a quasi-hieroglyphish.

Here too there are a host of brain-teasers, so let me attend to at least two. First, and in the inverse order of importance, the relationship between a name and the object it names is non-contingent in the sense that any use of it requires strict compliance to the rules mapping the language in which it is a name onto the world; otherwise it would end up in a misuse. There is, of course, no reason why that Athenean bore should have been called 'Socrates'. (One of the views that Plato explores in the *Cratylus* was shown by him to be wrong; there is nothing in a thing which compels us to call it by the name that we do in fact call it, and not by some other name; no object can suggest its own name.) But when once Socrates was given the name 'Socrates', it became *his* name. (This is why one can afford to renounce any thing, but not his name.) Only he is referred to, and only he can be referred to, by that name; as—it is one of the rules of representation of our language—that name refers only to him. Language cannot represent the world if names were not to be referentially stable, did not have constancy of reference. That is why when once 'a notation is established' and a mode of projection settled for, there is nothing arbitrary or contingent in the way an object is referred to, that is, how a name refers. A name and the object it names will have to go like Juno's swans. With this in mind, try to think to the way in which objects in the model are assigned to the existentially bound variables; concentrate on the fact that this assignment needs to be kept stable in the entire argument

(or think of the restrictions placed on, say, the rule concerning the elimination of existential quantifiers—existential instantiation, that is.) What one notices in this is that, in the form of the sentence whose *sense* it determines, the primitive sign 'will be *constant*', and 'everything else variable' (3.312, emphasis in the original); logically, only such signs are names. Thus, it is the essence of language that it requires names; only in one they will be singular terms, and another bound variables.

Yet, if we find some difference in the way in which the names in S, that is 'Socrates' and 'Simias', and the names of *S*, that is the bound occurrences of x and y, figure in the corresponding recursive characterizations of the reference mechanism of the languages to which they belong (the latter being covered in the inductive step), it is because we have been misled by the accidental features that crept into the characterizations themselves. It seems we have failed to fix what is essential and what is accidental in a semantic theory itself. Just because the production of a sign is required for representation—(for a symbol cannot *be* without a sign; it is like a Universal of Aristotle rather than a Form of Plato)—the rules of representation should not construed as if they include the rules of sign-production too. Script, orthography, etc. are not parts of grammar (committing spelling mistakes has nothing got to do with splitting the infinitives). Similarly, in the strict sense, semantics for Quinish begins where bound variables are assigned referents in the model). That is the initial step, really; and whatever is required to specify this step needs to be treated as a part of the (elaborate) specification of its (equally elaborate) mode of sign-production. This is reflective of the complexity of Quinish and its mode of representation.

We are now in a position to have a glimpse of the nature of names. A name, in essence, is a primitive symbol which functions as a vehicle of direct reference providing an initial link with the world in terms of which other referring expressions come to have reference, and whose occurrence in a sentence is required for it to have first a determinate *sense* and next a truth-value.

> 3.3411 So one could say that the real name of an object was what all symbols that signified it had in common. Thus, one by one, all kinds of composition would prove to be inessential to a name.

If that is what a name is and nothing more and nothing less, then names cannot have *senses*. All that we can say about a name is that '3.203 A name refers to an object, the object is its referent'. I have not as yet tried to explicate the import of the paranthesis in that remark, namely, that '"A" is the same sign as "A"'. I reserve that for another occasion.

NOTES

1. *A Survey of Wittgenstein's Theory of Meaning*, Calcutta, 1965; and 'On the Indiscernibility of Facts and Propositions', *Indian Philosophical Quarterly*, 1977.
2. From now on whenever I use this word in its technical sense I shall indicate this fact by keeping it in italics.
3. This is not something that can be taken lightly, for this has awefully important implications. I will try, in what follows, to draw out some of these. Also, this is what I want every reader of the *Tractatus* to take note of ; but only few do it. Ryle, I trust, is one of them, for he thought that in my insisting on it I was hitting the nail into the head of the matter at hand.
4. What Wittgenstein was after in the *Tractatus* is not an ideal language and its possible link to the world, but the essence of language in virtue of which language—any language, that is—represents the world. To state the same differently he was in search of the essential language which encapsulates all that is necessary and sufficient to enable it to represent the world. And he was not in search of it either after brushing aside our everyday language or hoping to find a substitute for it. His aim was to discover the mechanism in terms of which we would be able to account for the success of our language in representing the world. His attitude towards everyday language can be likened to Kant's attitude towards the commonsense picture of the world. Kant did not reject that picture; his intention, in the *First Critique*, was, on the contrary, to attempt at a critique of it, and attempt at that in order to explain how, after all, that picture does obtain. That is what propelled him to note the transcendental conditions for the possibility of experience. Similarly, Wittgenstein's view that philosophy is a 'Sprachkritik' (4.0031) was geared to indicate that the business of philosophy is to discern the essential (that is, necessary and sufficient) conditions of linguistic representation of the world, and explain how our language does represent in terms of those conditions.
5. There is a more important reason why names should have direct reference. It is that, but for that, sentences will not have unique *senses*: Though a sentence represents a fact in virtue of its form, only in virtue of its form it will stand in a representing relation to any (all) fact(s) that have that form. Yet, when we understand a sentence S we not only surmize that it represents a fact, but also that it represents *this* fact. This specificity is the outcome of the names occurring in S having direct reference to the objects of the world. I will not be exploring this point further as that would push me beyond the intended scope of this inquiry.
6. This is where Wittgenstein must have, like Hume earlier, experienced some agony—agony of the type that only the blessed have a chance to undergo. Was not Hume distressed at the fact that the beliefs providing some sort of a harmony to our received epistemological and moral life have no rational justification! Was he not puzzled as to the legitimacy of an argument that is cogent in itself and yet is destructive of the harmony of the received forms of life. It is these puzzles and distresses that made it impossible for Hume to continue with philosophy, and also made him turn to history.
7. In saying this I am making use of the way Wittgenstein, in the *Tractatus*, forges a semantic link between *sense* and *reference*. He construed even this link as an alternative to the way in which Frege links these semantic functions in the framework of his theory. To clarify and compare their respective positions requires a separate note, hence for the present I should try to be content with noting that whereas Frege subsumes reference under *sense*, Wittgenstein is treating *sense* as a function of reference, as something dependent upon reference. At least one aspect of the way Wittgenstein links these two can be discerned from my discussion of the *sense* of sentences in the following pages.

8. If we can learn anything from Plato it is this: there can be no formal theory of a particular. Any such theory will not be a theory of a particular, but a theory of all particulars of that form. Next, as a particular is made up of infinite number of forms no formal theory can be a complete theory of a particular. Thus it is the destiny of formal theories that they end up with either partial knowledge or non-unique knowledge. (This may be due to the reason that no particular is unique and no particular is exhaustible. Did not Aristotle say that there is nothing unique in a particular; what is unique is its existence.)
9. *xy* is to be read as : the ordered paid x,y.
10. This may be contested on the ground that the reference of free variables too is unique, in the sense that Quinish can be formulated in such a way that $C\phi x\phi y$ comes out, on the count of standard interpretations, invalid. Such an argument would be to my liking. However, conceding the maximum to the other point of view, I intend to be content (for the present at least) with the view that at least existentially bound variables refer uniquely.
11. Kripke's work in semantics of modal language has shown the need to maintain such a stability even in across-the-world's representations; I will not be able to touch upon it in this note. All that I intend to point out in this note is that the rigidity of the reference of names can be noted even with respect to representations of this world, and without going further to inquire into the nature of representations across possible worlds.

Notes and discussions

ARE ALL INDIAN PHILOSOPHERS INDIAN PHILOSOPHERS?

Daya Krishna has been hounding me for many years now about what Indian philosophy is. He has kindly shared with me his new piece,[1] and invited my response, which I am happy to give. Basically, it is simple. Daya charges me with irresponsibility (not 'academically proper', 'prejudicial', he avers)[2] for predicating the use of the term 'Indian philosophy' in the *Encyclopedia of Indian Philosophy* on an interpretation which he thinks mistaken though standard. My response is simply that the term 'Indian philosophy' is ambiguous as between philosophy done in India or by Indians and philosophy as *darśana*, i.e. undertaken in the service of liberation from *karma* and *saṃsāra*. It is the latter meaning that is standardly assumed by writers of textbooks, histories and other writings devoted to the classical *darśanas* of India, as Daya himself points out. He says that this reading 'is treated as axiomatic by almost all who write on the subject.'[3] Since that is so, I submit it can hardly be irresponsible for a project (the *Encyclopedia of Indian Philosophy*) which attempts to summarize the philosophy in the *darśana* literature to understand 'Indian philosophy' that way. Quite the reverse. To do otherwise would be irresponsible. It would be as if someone writing a history of western philosophy deliberately left St Thomas, St Augustine and other religious philosophers out of his history because he deemed that philosophy should not be in the service of religious goals.

Daya, however, argues that since 'philosophy' means or ought to mean conceptual analysis, 'Indian philosophy' should mean conceptual analysis carried on by Indians. If one were then to write a history of Indian philosophy in that sense, or an encyclopaedic treatment of it, one would not confine oneself to the *darśana* literature alone, but would presumably summarize conceptual analysis wherever they occur—in art, law, politics, astronomy, geometry, and the several other disciplines which were practised in India's distant past, with myriad additions as comes closer to the present. This would be a salutary project, one I hope someone essays. It is not the project essayed in the *Encyclopedia of Indian Philosophies*. Just as a history or encyclopaedia of western philosophy cannot responsibly exclude figures like St Thomas and St Augustine, who are paradigm cases of western philosophers, so a history of encyclopaedia of Indian philosophy cannot responsibly exclude Śaṃkara, Rāmānuja and their kind, for they are also paradigm cases of Indian philosophers.

Perhaps, however, Daya would agree to include both St Thomas and

Śaṃkara, say, since both of them engage in conceptual analysis, albeit in the service (at least as they themselves understood it) of goals such as salvation or liberation. 'But', Daya might say consistently with what he has written, 'I shall only admit those persons insofar as they have proposed conceptual analyses.' However, that would be to presume a very doubtful distinction. I doubt that one can disengage a philosopher's conceptual analyses from the purposes in his inquiry which make those analyses cogent.

Daya's own view on this point is, or was, different from mine. In his book *The Nature of Philosophy*,[4] published thirty years ago now, Daya argues at length that philosophy is not, as science is, about the nature of reality, but rather concerns conceptual problems, indeed, conceptual confusions; and that its proper methodology is clarification, conceptual analysis. Philosophy, he claims, is not about actual or even possible states of affairs, is not about any propositions that might be verified. Philosophical problems are not formal or logical in the way that mathematical problems are, either. Philosophical propositions are for Daya a different kind of proposition from either empirical or logical truths or falsities.

Now this is a view about the nature of philosophy which has gained wide acceptance in the wake of various persuasive spokespersons of it. I do not wish to be misunderstood as supposing that all propositions must be either empirical or logical. But I must confess I do not follow Daya's insistence on the extreme difference between the occasions for conceptual analysis and the occasions for empirical or logical inquiry. While I am sympathetic with the view that inquiry regularly involves conceptual clarification of conceptual problems, it seems to me that those problems arise in the course of inquiries involving all three kinds of elements: empirical and logical as well as conceptual. The philosophical state of analysis is that stage in any inquiry at which the most searching questions are asked, and clarification of concepts address those most searching questions. The clarification of concepts which is philosophical and not dilatory is that which arises in the course of trying to answer problems that have relevance to inquiries undertaken by men with purposes in mind. These purposes are sometimes quite specific, in other cases vaguer and broader, and they intertwine in ways difficult to characterize easily. To identify a given problem or proposition as empirical rather than philosophical seems to me unrealistic given the nature of inquiry. To put it another way, the notion that philosophy is a different enterprise entirely from science or religion or any other kind of inquiry results from elevating a possible division of labour (between philosophers and scientists, say) to the status of ultimate disinvolvement with the human context in which an inquiry occurs. That philosophers make a specialty of conceptual analysis does not entail that conceptual analysis has nothing to do with anything else.

In short, I don't believe that conceptual analysis operates in the sort of vacuum Daya implies it does. Conceptual problems arise in the course of inquiries dictated by human needs, and conceptual analysis, along with empirical and logical ones, are ultimately criticized as being successful or unsuccessful through satisfying or failing to satisfy those needs. Indian philosophy should be thought of in the same way. Daya, I gather, believes that those who are said to practise it deceive themselves about what philosophy really is when they view it as developing as a moment in the inquiry arising in connection with the attempt to achieve liberation. I take it he would determine what is and what is not Indian philosophy by identifying conceptual analyses taking place in India. Leaving aside the earlier point that this procedure would, if it were feasible, leave out of 'Indian philosophy' the largest portion of what has historically been thought to be comprised within it, I would raise the question whether such a procedure is even feasible. It would involve distinguishing those conceptual analyses which are engaged in as a way of discovering the nature of reality, or which lead to achievement of values considered ultimate, from conceptual analyses engaged in for no purposes whatsoever, for their own sake as it were. But I see no way of making this distinction applicable in deciding whether, say, Nāgārjuna's clarification[5] of the notion of illumination—surely one of the clearest analogues to western conceptual analysis one can find in the Indian literature—is 'pure' conceptual analysis or conceptual analysis employed in the service of a purpose. What is clear is that it is conceptual analysis employed for at least the purpose of refuting an opponent's argument; but that doesn't show that it is 'pure', since analyses are regularly used to refute opponent's arguments in the context of inquiry (e.g. serving other religious purposes).

Daya is a professional philosopher, a line of work with a tradition he thinks of as an honourable one. It is, he thinks, at least a western tradition. He would like to see it as being not just a western tradition but a universal one, so that Indian philosophy would be philosophy as practised in India, just as western philosophy is philosophy practised in the West. Potter comes along and points out that what Indian writers have themselves called 'Indian philosophy' doesn't exactly correspond to the tradition of western professional philosophy, since it is confined to those places—the *darśanas* that speak of *mokṣa* as their ultimate concern. Daya doesn't give a fig for *mokṣa*. He would like Indian philosophy not to be tied to *mokṣa*, and he is irritated that these *darśana*-wallahs have presumed to take over the mantle of philosophy which, he thinks, belongs to those who do the kinds of things he and other professional philosophers do. So, since he feels strongly that philosophy ought not to be confined to *mokṣa*-seeking inquiries, he argues that it isn't. Since it is aggravatingly the case that Potter is not alone in equating philosophy in India with inquiries connected with *mokṣa*-seeking, he insinuates that the equation he wishes weren't so only seems so because of a plot by religious types using persuasive rhetoric to feather their nest. He searches in the scholarly literature to find evidence of the truth that he feels must lie behind the window-dressing. For example, he finds scholars who think that the later defenders of *darśanas* may have conflated non-*mokṣa*-seekers like Gautama

and Kaṇāda with the tradition of Nyāya and Vaiśeṣika by slipping appropriately *mokṣa*-oriented *sūtras* into their texts.[6] He denies that Navya-Nyāya logicians had any concern for *mokṣa*. He denies that *mokṣa* is a *puruṣārtha* in the same sense as the other three, despite the India-wide understanding of four *puruṣārthas* of which *mokṣa* is the supreme one. He hints that the common understanding is rhetoric, 'the rhetoric of the *puruṣārthas*',[7] but that Potter and others shouldn't be taken in by it. He concentrates on these points and conveniently ignores the massive evidence that a very large portion of those texts, called philosophical by scholars, explain themselves as written in the *mokṣa*-seeking context he wishes didn't exist. In short, he manages to convince himself that philosophy in India has nothing particularly to do with *mokṣa*, led on by his belief that it shouldn't be so circumscribed since philosophy is pure conceptual analysis.

Now I agree with the specific points that Daya raises, with certain qualifications. I recognize the scholarly evidence concerning the possibility of multiple authorship of the Nyāya and Vaiśeṣika *Sūtras*, though I think he should recognize that evidence is hardly conclusive of tampering. In any case, the *sūtras* are viewed in the Nyāya and Vaiśeṣika *darśanas* as of a piece with those systems' *mokṣa*-seeking concerns. I agree that Navya-Nyāya logicians were primarily interested in epistemological issues and not primarily in *mokṣa*, although I believe it would be fairer to say that those logicians only occasionally thought and spoke of *mokṣa*—they did so sometimes, as witness the *Muktivāda* section of Gaṅgeśa's *Tattvacintāmaṇi*, for instance. I admit that *mokṣa* is a late-comer among the *puruṣārthas*; and that some of the literature, identified with certain *darśanas*, is not philosophical in the accepted (my) sense of the term, e.g. the *Mīmāṃsāsūtras* along with Śabara's *Bhāṣya* thereon, which hark back to an understanding of Mīmāṃsā as mere scriptural exegesis in a context where *dharma*, not *mokṣa*, reigns supreme as a human goal. Later on, however, Mīmāṃsā in the hands of the Bhāṭṭas and Prābhākaras becomes *darśana* too.

But admitting agreement with Daya on these points to this extent does not, I'm afraid, change the obvious fact that classical Indian philosophy, as the literature so described is understood by those who study it today, was addressed to *mokṣa*. It's not a question of what we'd like the case to be. Daya thinks I am a part of, or at least an unwitting dupe of, a conspiracy of religious types out to spiritualize what is not really spiritual at all. I have no interest in interpreting anybody or anything as spiritual, either in Daya's sense (which seems to me what we more normally call 'idealist', one who denies the mind-independent reality of matter) or in the more common sense of one who recognizes supernatural forces beyond our understanding. There are spiritual *darśanas*—in both senses, but there are also *darśanas* which are not spiritual in either sense, e.g. Ābhidharma schools of Buddhism, Jains, Īśvarakṛṣṇa's Sāṃkhya. It is Daya who identifies *darśanas* with spirituality. I don't.

Indeed, where Daya thinks 'my' account has trouble with Nyāya, Vaiśeṣika and Pūrvamīmāṃsā, my own view is that the prevailing account of Indian philosophy, which is perforce mine, has trouble with those who deny *mokṣa* altogether, e.g. Cārvākas, and those who view *mokṣa* as only a penultimate goal, e.g. Vedāntic thinkers of Śrīvaiṣṇava persuasion who think of service to God as the ultimate goal to which attainment of *mokṣa* is only a possible, not even a necessary step. Both Cārvāka and later Viśiṣṭādvaita are often spoken of as *darśanas* despite these discrepancies. But both Cārvākas and Śrīvaiṣṇavas can be accommodated, I believe, within the accepted view of Indian philosophy (my view, the one Daya decries) through understanding the Cārvākas as addressing themselves to the most searching questions about *mokṣa* and giving ultimately negative answers, and understanding the Śrīvaiṣṇavas by seeing the philosophical portion of their system (the part pertaining to *mokṣa*, the *darśana*) as a part within a larger whole which is itself a devotional and not a philosophical system. The devotional movement in the past few centuries creates a serious tension between philosophy and (devotional) religion; and it is a remarkable legacy of the power of traditionalism in India that devotional sects continue to speak of themselves as committed to a *darśana*, given the force of that tension.

The term 'Indian philosophy' as *darśana* becomes inapplicable, however, when addressed to inquiries, such as are standard nowadays in India, in which the entire world view of *karma*, *saṃsāra* and *mokṣa* is clearly not in point. While such inquiries may well be philosophical and may be carried on by Indians, they do not constitute Indian philosophy as that subject has been understood in the literature on Indian philosophy. But then, 'American philosophy' meaning pragmatism, transcendentalism and other peculiarly American contributions is a different use from 'American philosophy' meaning anything philosophical carried out by an American. I am an American philosopher, but probably not an American philosopher! Can't Daya be happy being an Indian philosopher who is not an Indian philosopher?

NOTES

1. Daya Krishna, 'Indian Philosophy and *Mokṣa*: Revisiting an Old Controversy', *JICPR*, vol. ii, no. 1, 1984, pp. 49-65.
2. *Ibid.*
3. Daya Krishna, 'Three Conceptions of Indian Philosophy', *Philosophy East and West*, 15, 1965, p. 37.
4. Daya Krishna, *The Nature of Philosophy*, Prachi Prakasan, Delhi, 1955.
5. Nāgārjuna, *Vigrahavyāvartanī*, verses 33-39. Nāgārjuna argues that 'to illuminate' means to cause something to become lit up, and that since that is so, the opponent's notion that fire lights itself up along with the objects in the vicinity is indefensible, since it would, e.g. imply that fire was dark before it became lit up.
6. Daya Krishna, 'Indian Philosophy and *Mokṣa*', *op. cit.*
7. *Ibid.*

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POPPER'S CRITERION OF FALSIFIABILITY OF SCIENTIFIC THEORIES: A NOTE

It is argued that scientific theories have a three-tier structure. The first level provides the general theoretical foundation, the second level a specific model from a choice of alternatives and the third level defines a set of appropriate (but variable) auxiliary statements. The second (third) level theories can be strongly falsified by tests which depend on the validity of a well-defined conjunction of first and third (second) level theories. It is this theoryladenness of the tests that makes the strong falsification of first level theories impossible. Such theories, though metaphysical by Popper's definition, are necessary ingredients of more complete scientific theories. Field theory (both classical and quantum), relativity theory, Darwinian evolutionary theory, etc. are all of this category.

Although Popper's criterion that only theories that can be falsified (Popper, 1959) are 'scientific' has gained widespread acceptance among physical scientists, it has been seriously questioned by evolutionary biologists (according to Popper, Darwin's theory cannot be falsified and must, therefore, be metaphysical in the pejorative sense) and some philosophers (Putnam, 1974) who contend that it is generally impossible strongly to falsify scientific theories by experiments alone. As well as clarifying how and why the controversy arises and in what sense both Popper and his opponents are right, this note is intended to show to what extent theories that are by themselves devoid of physical content and are, therefore, metaphysical by Popper's definition invariably form ingredients of more complete scientific theories.

The source of the controversy and confusion lies in the failure of both schools to recognize that scientific theories have a three-tier structure. The first level theories are those that define the general theoretical framework in terms of which the phenomena in question are to be described. Examples are classical and quantum mechanics, classical and quantum field theory, relativity theory, thermodynamics, statistical mechanics, evolutionary theory, etc.

The second level consists of models in the context of a given first level theory. Examples are Coulomb's inverse square law of electrostatic interaction and Newton's inverse square law of gravitation. The (non-relativistic) classical laws of motion (first level theory) are precise but empty in the absense of these mathematical expressions for the forces. Models of unified fundamental interactions within the general framework of relativistic, renormalizable quantum field theory are further examples of second level theories. In all these cases, alternative models such as a different power law behaviour (r^{-n} where $n = 3, 4, \ldots$) for the electrostatic or gravitational forces are *a priori* possible. Similarly, different symmetry groups (SU (5), SO (10), E (6), etc.) are possible candidates for the grand unification of fundamental interactions. Within the framework of first level theories alone the choice between these theoretical alternatives is logically entirely arbitrary.

The third level consists of what Putnam (Putnam 1974) calls 'auxiliary statements' or arbitrary boundary conditions which are variable but without which the first and second level theories are devoid of precise predictions. For example, in the case of pre-relativistic astronomy (e.g. classical mechanics plus a given power law behaviour for universal gravitation), the equations of motion cannot be solved unless several additional auxiliary statements are specified. These are, for example, that the planets move through perfect vacuum, the other planets do not exert any appreciable influence over them, etc. Given these auxiliary statements (third level theory) and classical mechanics (first level theory), it is then possible to falsify all but the inverse square law of gravitation (second level theory) which is the only one consistent with Kepler's empirical laws of planetary motion. Independent laboratory experiments (e.g. Boys' method) can also be designed which satisfy an analogous set of auxiliary conditions, and can again falsify all but the inverse square law of gravitation within the general framework of classical mechanics. Having thus falsified all but the inverse square law of gravitation, one can then use this law and classical mechanics to falsify in turn some of the auxiliary statements (for example, that the other planets do not exert an appreciable influence) in the case of planets whose orbits deviate significantly from Kepler's laws. This method has proved extremely powerful for astronomy and has led to the prediction and discovery of new planets (Neptune).

Similarly, given relativistic, renormalizable quantum field theory and a set of auxiliary statements, experiments can be designed with high energy particle accelerators, targets and detectors which satisfy these auxiliary statements and can distinguish between various alternative theoretical models of unification. Such controlled experiments have been carried out, for example, to falsify all but the standard Weinberg-Salam-Glashow model of unified electro-weak interactions (based on the symmetry group SU (2) (X) U (1)). It is worthwhile to emphasize that experiments are designed precisely to create conditions in which the auxiliary statements, used in deriving the predictions to be tested, hold a possibility not open to astronomy. It is clear from these examples, therefore, that Popper's criterion of falsifiability is certainly applicable to second and third level theories. These examples also clarify to what extent tests are themselves 'theory laden': they depend on the assumed validity of a combination of first and second (or first and third) level theories. It is precisely this 'theory ladenness' of the tests that makes the strong falsification of first level theories by experiments alone extremely difficult, if not impossible. This is precisely Putnam's contention (Putnam 1974). For example, the observation of the advance of the perihelion of Mercury (43″ of arc per century) cannot be used as sufficient evidence against classical mechanics, for it is possible to explain this phenomenon within the framework of Newtonian gravitation theory (classical mechanics plus Newton's law of gravitation) by changing the set of auxiliary statements and introducing a small influence (perturbation) of a third and hitherto unknown celestial body. Simi-

larly, the magnitude of deflection of star light grazing past the sun depends on the unknown geometry of the sun's surface (third level theory), and cannot, therefore, be used to falsify strongly Newtonian gravitation theory. Another example is the Michelson-Morley experiment which is usually construed to falsify classical concepts of space and time. Historically, we know of various attempts to accommodate this null result within the framework of classical mechanics by introducing additional (though admittedly artificial) hypotheses (e.g. Fitzerald's suggestion that rods contract along the direction of motion by a suitable amount). It is possible to give more examples, but I think it is abundantly clear that the unavoidable dependence of tests on first level theories makes the strong falsification of these theories usually impossible. To quote Einstein (Einstein, 1949): 'The first point of view is obvious: the theory must not contradict empirical facts. However evident this demand may in the first place appear, its application turns out to be quite delicate. For it is often, perhaps even always, possible to adhere to a general theoretical foundation by securing the adaptation of the theory to the facts by means of artificial additional assumptions.' As Putnam (1974) and Kuhn (1962) have rightly pointed out, it is only when an alternative paradigm which has greater power of correlation of empirical facts and a simpler logical structure becomes available that the older one is gradually replaced. Examples are the Copernican revolution, the replacement of Newtonian mechanics by Einstein's special and general theories of relativity and then quantum mechanics, etc.

Unfortunately Putnam does not clearly distinguish between first and second level theories, and, therefore, fails to recognize that second level theories can be strongly falsified within the context of a given first level theory, a possibility that lies at the basis of much constructive-speculative activity in science. Popper, on the other hand, completely ignores the distinctions among the three levels of scientific theory, and is therefore led to believe that a theory that is not falsifiable is altogether unscientific and metaphysical. The recognition that scientific theories have a three-tier structure helps to clarify the situation. Theories that do not have this complete structure are empty in the sense that they are incapable of making precise predictions and cannot therefore be falsified by tests. As we have seen, first, second and third level theories by themselves or in an incomplete conjunction are of this type. However, such theories need not be branded as being necessarily altogether unscientific and meaningless. They are both useful and meaningful in the sense of being (mathematically) precise and communicable, and, as we have seen, can and do serve as basic ingredients of more complete scientific theories. Darwinian evolutionary theory obviously falls within this category.

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ON TOLERANCE : A NOTE

Each political society has a guiding principle and specifies the conditions which will make possible the realisation of the principle. The condition which enables the society to function according to the principle is regarded as the *virtue* of the society. 'Justice'. 'loyalty'. 'equality' for instance are the virtues of the societies ruled according to the principles of aristocracy, monarchy or liberal democracy. Many philosophers, Robert Paul Wolff, among others, regards tolerance as the virtue of the society which is governed according to the principle of democratic pluralism.

Tolerance as a political virtue is a 'state of mind and condition of society which enables pluralist democracy to function well and realize the ideal of pluralism.' A proper understanding of the general philosophical implications of tolerance therefore necessitates a description of the pluralistic democratic society and also of the conditions which help in the realisation of the principle of democratic pluralism.

Pluralistic democratic society is the effect of the increased size of the society and industrialisation in place of the private firms or individual families. Today, in every sphere of society, the direct face to face relation between the individuals and between the individuals and state is reduced to the minimum or lost. All forms of social contact are mediated by associations. Hence in modern society we find so much of institutional arrangements. Different organisations, voluntary and involuntary, play a remarkable role as means of social contact in the local sphere. There is also a central organisation which sustains social contact in the global sphere. Religious, ethnic and racial heterogenity is the hallmark of political pluralism. May be due to immigration, different ethnic groups of diverse religious sects reside in a pluralistic community and this has been possible because of the *compromise* between the groups. In other words a pluralistic democratic society is a 'complex interlocking' of voluntary and involuntary associations—political, economic, religious, ethnic. The vantage point for this form of society is that the groups which constitute the society leave a positive, formative and supportive influence upon the individuals and promote a healthy development of human personality.

The precondition for the sustenance of pluralism in the political sphere is the cultivation of the attitude of tolerance in the members of the group and thereby in the group as a whole. Man must have the capacity to bear the tension resulting from the opposition between the ingroups and outgroups and mutual acceptance of the same. The compromise between the groups becomes easier if the individuals who constitute the group are aware of the fact that the compromise is between the opposed interests which motivate thought and action and this sort of compromise will not affect the group norm. It has been proposed to draw a line of distinction between group interests and group norms on the basis of subjectivity of interest and objectivity of norms. But as objectivity of norms itself is a questionable assumption, the notion of compromise between the groups can easily be extended to the plane of group norms.

Liberal tolerance, as espoused by the pluralists is able to avoid the miseffects of classical doctrine of tolerance. The latter is related to the classical doctrine of individualism and liberty. In a liberal society the private and the public spheres of action were clearly distinguished. In the private sphere the individuals were not enslaved by social laws and enjoyed/suffered the free life of a self-interested individuals. Society never interfered with the matters of the inner sanctuary of the private sphere. But in the public sphere the other directed activities of the individuals were regulated by the social law of equity and the classical politicians justified state intervention in the public sphere on utilitarian grounds. Thus in a liberal society '...tolerance is the readiness to respect the inviolability of the private sphere of the individuals' existence.' Freedom from the constraints of group life and group values made society a system of independent self-centred individuals where each individual used the other individual as means for gratifying, personal wishes. The individuals were deprived from the warm affection of the society, which according to the conservative philosophy of community, work as a source of strength. In a liberal society the state had to tolerate personal idiosyncrasies of infinite extent while the individual suffers, as the Marxist points out, from alienation. The absolute lawlessness in the private sphere allowed the individual to pursue pleasure endlessly. The unconstrained endless pursuit of pleasure has a frustrating effect on the personal life of the individuals, and this breeds as Durkheim says 'proneness to suicide'. Hence the liberalist in the name of toleration has created the situation of *anomie* in the private sphere.

The pluralistic society permits group diversity. Here state refrains from interfering with the internal practices of the group. Legal or informal social sanctions do not work in the 'private' sphere of group life. This is analogous to the liberalist's tolerance of individual's form of life with the difference that here we have groups as the basic social units. The vantage point for the pluralist is that while the groups enjoy the right to differ from each other, state does not have to tolerate the idiosyncrasies of the individuals. The pluralist shares the view of the conservative sociologist that man is by nature a social being. Group life and group values are not the threatening impositions on the life of the individual. The individual has a natural disposition to affiliate himself to a group and identify his life with the life of the group. Thus pluralism acknowledges group diversity and justifies the attitude of intolerance towards personal idiosyncrasies.

Does tolerance help in the creation of a society without the threat of misery, cruelty and aggression? It has been pointed out by many thinkers, e.g. Marcuse, that in the name of preserving *status quo* in a pluralistic society, state yields to such practices and tolerates those modes of behaviour which ultimately are impediments to the realization of a social structure which is free from violence and suppression. A society which uses police force and tecnhical aids to suppress rebellions, protests, insurrectionary activities cannot extend total protection to the groups and hinders the creation of a compassionate society. Actually there is a perceptible gap between theory and practice of tolerance in pluralistic democracy. Theoretically stated, the locus of tolerance is the opposition between group interests or group norms. But in practice, the locus is shifted to the passive acceptance of the authority of a particular group which simply by virtue of a quantitative measure enjoys a privileged position in society. In the name of liberal tolerance the pluralist has reduced tolerance to a means for sustaining institutional inequality in society. It points out that tolerance as a political virtue is an universal principle which ought to be equally observed by groups which have equal social status though different roles may be assigned to them for the smooth working of society. If such a condition prevails in society armed force will not be required to sustain the *status quo* and society will refrain from giving any training to the groups along this line and a 'humane' society will emerge spontaneously.

In a pluralistic society the rightist accepts the government in spite of experiencing its miseffects on human life because he is committed to a particular political ideology and this fosters in him the belief that counterveiling thought and action will not be conducive to the realization of the concerned political ideal. The leftist has the official right to oppose the government and constitutionally the latter should honour the leftist movement. But the actual situation is different. The leftist movement is defined by the machinery which is the ruling power of the society and the government is intolerant toward the champion of the progressive movement. This is proved by the use of force to suppress the progressive movement.

It is true that tolerance must have its limits. The unqualified acceptance of all defiant, dissident and disobedient movements are not rationally and morally defensible. Rationality demands that there must be certain limits to speech, action and even to the proposal of certain policies. But it is not rational that the limiting conditions should be defined by the ultimate end and the historical process that would gradually lead to the realization of the end. For this leaves scope for concentration and expansion in exercise of power of governing group and improvement and vindication of the laws of

the sanctioning authority like state. In that case, society falls into the grip of unavoidable danger of violence. This form of social practice is self-defeating too. The philosophy of relativism underlying the practice of tolerance implies that there is no unique method which can establish the validity of a particular political ideal. In the absence of such a method the sociologist cannot speak of a scientific criterion of choice. As in principle the conflicting ideals are equally valid, neither imposition of a particular ideal nor a passive compromise between them will settle the problem of the range of tolerance. One might say, in democracy the ideal is not imposed on the people but the people themselves participate in the government. I will not take up the widely debatable issue of the methodology of adult franchise in the present paper. I would only recall the point which I have just mentioned and conclude that even adult franchise is not a scientific means for the establishment of greater validity of a particular political ideal.

It may happen that the groups which could not prove their strength at the time of election may gain momentum by the post-election ideological movement and make an open and active opposition to the execution of the law of the sanctioning authority. In that case, the governing group on the ground of the mandate which it has won in the election can declare such opposition as violable but it will not be justified both on moral and rational grounds. The governing group cannot discount the moral component of the movement simply because it is a non-conformable movement; nor is it moral to prohibit such movements during the period for which the existing party has won the right to govern. The prohibition is not rational because dissident movement is a civil right of a group. At this point two questions are moot. (*i*) What should be the cut off point between tolerance and intolerance; (*ii*) how will the party exercise his right to prove its increased momentum. As regards (*iii*) it is reasonable for the groups to create a consensus by the formation of specialized journals, the foundation of ideological societies and various other available institutional attendants. The reasonable answer to (*i*) is that the governing group should clinch the issue at the point where the natural civil rights of the individuals are preserved not entailing the impoverishment of the weaker section. Once we are convinced that violence can be eliminated or reduced to the minimum in settling social disagreements, the above answers cannot be questioned.

Let us re-state the limiting conditions of tolerance. First, the limit to tolerance is defined by the particular political ideal of the authority. Secondly, sanction of violence to deal with the situation created by the violation of the pattern of opposition defined by the ruling party or class. The first form of limitation is unjustified because it views a partial ideal as the blueprint of what society ought to be like. and in an extreme case may lead to the 'wholesale condoning' of the repressive movement. The second cannot be approved because it corrupts community ethics.

Society which is a complex of heterogenous culture should settle social

disagreements by a reasonable dialogue with the conflicting groups. By reasonable dialogue we mean exchange of reasonable arguments. Individuals or groups can reasonably argue only when they develop the attitude of reciprocity which means an attitude to convince others by arguments leaving open the possibility of being convinced by others' arguments. In fact it is this attitude of reciprocity in reasonable arguments that distinguishes it from propaganda. Tolerance, without this attitude of reasonableness, leaves the social disagreements undecided which subsequently create more complex social problems. What I want to point out is that the concept of tolerance is somewhat like categorical imperative. It is a form of decisional judgement but by itself neither a judgement nor a decision. The content of judgement has to be weighed and assessed. In this assessment individual group rights are considered. But there are certain state of affairs where such considerations may engender intolerable situation. We have an intuitive understanding of the problems which may arise from the primacy of such individual rights as private property (at an unlimited scale). The most damaging consequence that may result from ascribing priority to individual's property right is the expansion of monopoly business the consequence of which will be unemployment, i.e. denial of right to live and work for the weaker section. The basic content of toleration therefore must take care of the fact that one's fundamental rights, and rights to live and work (and right to property) must not prove inconsistent with others, rights to the same (property, life and work).

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Book reviews

N.V. BANERJEE, *Buddhism and Marxism: A Study in Humanism*, Orient Longman, Delhi, 1978, pp. 134, Rs. 30.

In addition to giving a critical exposition of humanistic elements in the teachings of Buddha and Marx, the author of *Buddhism and Marxism: A Study in Humanism* has given some suggestions towards reconstruction of humanism in his own way and in a different perspective. The author holds that humanism has a well-defined starting point and final destination. The original ignorance seems to be the realistic representation of the 'original state' of man rather than 'original sin', the Judaic-Christian concept or the 'original fall' emphasized by Sartre. The original ignorance consists in man's lack of the 'world-understanding', observes the author, and the final destination of humanism points to man's concealment of his obligation towards his fellows. The final destination can fulfil in communion with others.

Both Marx and Buddha are said to have been aware of this obligation on the part of man. Marx felt that various alienations with which man is confronted could be eliminated in a communist society. Buddha's statement about human suffering in Four Noble Truths and the way out of it in his Eight-fold path gives a solution of the problem of human suffering. Still the author feels that Buddha's Eight-fold path 'provides on significant indication as to what humanizing principles of conduct ought to be.'*

Prof. Banerjee admits that Buddha's teachings have been of great help to him in the discovery of humanizing principle which is none else than the 'principle of love'. For the author humanism is a doctrine which has a beginning in the original ignorance of man, and its goal is the principle of love in the conduct of all human affairs. The study has been undertaken into three parts, viz. Buddhist humanism, Marxist humanism, and the future of humanism. The first two parts throw sufficient light on humanism as found in the two strains of thought along with the shortcomings which, Prof. Banerjee feels, should find no place in the doctrine that he is advocating.

Prof. N.V. Banerjee argues that 'innermost core' of the human world is not subject to variation as opposed to its external veneer. The 'innermost core' manifests in wisdom and some great thinkers like Buddha, Socrates and

*N.V. Banerjee has wrongly taken the four Noble Truths and the Eightfold Path as separate sets of doctrines. The fact is that the latter is a part of the former. It happens to be the Fourth Truth.

Jesus have played a significant role in the 'awakening of wisdom' that has resulted in the revelation of the innermost meaning of human existence. 'The realization of deeper human existence', observes Prof. Banerjee, 'should be possible in the one way and one way only, namely, the strict human way' (p. x). It has been pointed out that Marx recommended the employment of violence as a preliminary step towards the fulfilment of human destiny. The reference has been made to Christianity commending its refrain from the path of violence, though at a later stage he attacks Christian authorities for indulging in violent means. It has been further remarked that Buddhism 'had the promise of becoming the world-religion' whereas Christianity missed this characteristic as 'it gradually gave up the humanistic elements in the religion of Jeasus' (p. xii). In addition, it 'became institutionalized and thus acquired a number of features such as the doctrine of heresy and inquisition' which were not congenial to the spirit of humanism. The gradual decline of the influences of Christianity and emerging influence of Marxism along with the loss of the essential identity of Buddhism in the modern world are noteworthy features. It has been observed by the author that 'growing importance of scientific outlook and the progress of Marxism in the modern world are portents of the futility of the religion of God'. 'Religion without God' is said to be characterizable as humanism. Whether Buddhism or Marxism or neither of these but 'something else of their kind instead' should be regarded as true humanism is the question with which author concerns himself. In the first part of his book, Prof. Banerjee reflects on what humanism is, and then on the Buddhist ideal, the way to *nirvāṇa* and the impact of Buddhism upon human situation.

Humanism has been conceived here as that doctrine which concerns itself with human interests, without any reference to the superhuman or the divine. Again, some references have been made to Christianity and it is admitted that it has been 'pregnant with the promise of developing into a religion of humanity...of course, in a sense different from which Auguste Comte took it to be' (p. 1). Commenting on various forms of humanism, Prof. Banerjee argues that 'no brand of humanism can be genuine which is opposed to the *legitimate* discoveries of science. Regarding relationship between humanism and social sciences, Prof. Banerjee, thinks that the 'task of humanism is due to begin where that of Social Sciences ends' since he feels that, of the two aspects of study of man what he is destined to be, social sciences concern themselves with the first one; the latter is the task of religion, whether the religion of god or the religion of man, that is, humanism. The author believes that the social sciences present a distorted picture of the actual human situation 'on account of their separatist investigation of man in his diversified situation'. The social sciences are 'gradually drifting towards the understanding of man on the analogy of things'. Prof. Banerjee observes that man has a destiny different from the constituents of the rest of the universe. Humanism is an adventure which can neither be characterized as scientific nor religious.

Concerning Buddhist ideal of human life, Prof. Banerjee points out that it culminated in *Bodhisattva*, that is, a person who is fully entitled to final liberation but defers it till all others attain it and he puts in efforts for the liberation of all out of compassion. Buddha was moved by the fact of universal suffering and found a way out of it in his eight-fold path. Of the two attitudes towards human suffering, it has been pointed out that one is found in the Stoics in enduring suffering with fortitude and the other one is that of Christianity, that is, undergoing most severe form in the manner of bearing the Cross and shedding of blood to save mankind from evils. Regarding Christian way out of human suffering, Prof. Banerjee remarks that it is 'indeed the way which surpasses any other of its kind in glory and sublimity'. One notes with interest that Prof. Banerjee quickly shifts his attention towards the Christian way of life.

For a while he directs his observation on to the ideal of human life which consists in man's membership of the world communist society, which comes into existence after withering away of all kinds of states, a society which is free from all alienations. The author observes that the founders of communism, Marx and Engels, were not clear as to the way of creating the condition which could overthrow capitalism.

The author has thrown some light on the different meanings of the word *nirvāṇa*, according to different schools of Buddhism. It has been observed with content that the Buddhist ideal of human life fulfils a major requirement of humanism, i.e. it is independent of superhuman or divine, though it is not the only essential feature of humanism. It has been remarked by the author that the ideal of *Bodhisattva* represents quintessence of humanism and resembles the Christian idea of suffering for others. In the Mahāyāna Buddhism the author sees the possibility of a universal ethics which is another way of humanism.

Prof. N.V. Banerjee remarks that the Eight-fold Path is not completely humanistic although it rejects inhuman devices including violence. It has been pointed out that the author is dealing with essential Buddhism as distinguished from Buddhism in its degeneration in various forms. Buddhism is regarded by the author as the earliest type of humanism which does not completely fulfil the requirements of the author's version of humanism. While considering the impact of Buddhism, it has been pointed out that the middle way taught by Buddha proved attractive and influenced individual as well as society. Some of the kings also felt interested in the Buddhist way of life as, for example, Bimbisara, Prasenajit, Ajatsatru and Asoka. The author observes that monastic order brought into existence a social division between privileged monks and the common masses. The author feels that this division tarnished the image of the humanistic spirit of Buddhism. It has also been felt that Buddha was reluctant to bring women into the monastic order. Of the monastic order, the author says that it was the source of conservatism, supernaturalism and superstitions, and they could not fit in with the progressive outlook

of Buddha. While noting with distress that Buddism 'failed to shape the political and economic aspects of society in strict accord with the spirit of humanism' (p. 29), the author makes out that Buddhist views about the duties of a king had some impact on the rulers. The duty of a king was not merely to collect the revenues but to protect the subjects also. The suggestions of Buddhism 'could transform even a kingdom into a sort of socialist state' (p. 30). Asoka was the only king who is reported to have tried to implement Buddhist suggestions. Various evils crept into Buddhism gradually after Asoka. It has been claimed by the author that a 'humanistic ideal of life did not reveal itself to Buddha in its complete or fully developed form and it seems to remain unrevealed till this day' (p. 35). It is further remarked that gradually Buddhism was absorbed in Hinduism, and the conflict between the two culminated in the victory of the latter over the former. With the gradual process of absorption Buddhism retained its name without substance. Prof. Banerjee observes that 'this was one of the tragedies of the historical process due to the folly of man himself' (p. 37).

The inadequacies of the Buddhistic humanism, as pointed out by the author, may be due to the result of the difference between the teachings of Lord Buddha, himself and the way it has been practised later on. It was never intended by Buddha that monks would misuse their authorities. No one could help it since they happened to be the subject of historical process.

While giving a brief account of Marxist humanism, the author also notes with despair the difference between the teachings of Marx and their practice. Like Buddha Marx was also aware of human suffering. But Marx differed from Buddha in stressing that suffering was caused by the exploitation of the unprivileged majority. Marx attributed that at the root of all kinds of suffering lay the suffering of man in the economic life. The author considers that the Buddhist humanism is rather simple and straight-forward, whereas Marxist humanism involves a great deal of complication. Yet it 'seems to have an advantage over Buddhist humanism on account of its having stupendous foundation' (p. 43).

The author provides a concise account of the Marxist interpretation of history and briefly touches upon account of history which advocates recurrence of events in a cyclic order like natural phenomena. The best way, according to the Greeks, especially the Stoics, is to endure suffering and not to revolt against it. Prof. Banerjee also discusses Christian interpretation of history which is mainly concerned with the salvation of mankind. Since the advent of Christ, the history of the world has been the history of salvation (*Heilsgeschichte*). The characteristic of the Marxist interpretation is that it does not refer to anything other than man. The reason of the exploitation of the proletariat by the capitalist is the power which comes through control over the means of production. On account of such power, the capitalist develops into the ruling class. This results in social, political and economic inequalities. The two social classes are united by a common economic interest. Marx derives

the concept of alienation from Hegel, but unlike Hegel he gives to it a socio-economic significance. According to Marx, wealth in the form of capital is also a mode of an alienation; it is a product of social labour but it presents itself as the power of employing human beings. These are the dehumanizing forces which should be eliminated from society. The elimination of the various modes of human alienation has been suggested in the theory of dialectical materialism. Capitalism like feudalism is only a passing phase. In the process of class struggle the dictatorship of the proletariat emerges. For liquidation of capitalism Marx approves the cult of violence, whereas the author thinks that the cult of violence is incompatible with the spirit of humanism, although in a free communist society violence would cease. The author opines that such interpretation of history, 'is an unnecessary intellectual exercise from the point of view of humanism' (p. 59). Instead of furnishing an interpretation of history one should attempt at the enrichment of human destiny. Strangely enough, the author feels that Buddha's approach to humanism is preferable to that of Marx.

While discussing the impact of Buddhism on human situation, the author comes out with a few observations on the impact of Marxism on the same, and he finds that it could not have the desired effects till now. It seems that the Marxist interpretation of history has not turned out to be true in recent times or maybe it will take long before we land in the Marxist utopia of a classless society. It is noted with interest by the author that Marx wanted to relate the theory of humanism with its practice, an aspect which was missing in Buddhism. As opposed to Buddhism, Marx thought that the circumstances which cause dehumanization of man are external to him. Buddha thought that the causes of dehumanization are internal, and, according to him, both the capitalist and the proletariat are dehumanized. The author further notes that the Marxist outlook of life is not adequate, for Marx failed to inquire into the deeper significance of human suffering.

Prof. Banerjee observes that humanism should aim at the elimination of the *potentiality* of suffering as such which can be brought about by *wisdom* which forms the foundation of humanism. Judged from this point of view, the problem of suffering, according to Marx, degenerated into a political one. Prof. Banerjee observes that violent revolution may bring about another kind of suffering. Moreover, Marx never indicated clearly the operational mode of revolution; he left it to his followers; as a result of that different brands of Marxism emerged. Buddhism and Marxism have an interesting parallel in the fact of split. Like Buddhism Marxism also split in many schools. As Buddhism assumed different forms in different countries, so did Marxism. Some leading socialist parties in Europe did not like the idea of proletariat revolution. The author has given a very interesting account of how Marxism split into different forms. It has been observed that the world revolution as imagined by Marx did not come true and the state system is still very much there instead of being withered away. A brief account of the various phases of deve-

lopment of Marxism in Russia is also provided and it is noted that 'the concept of "co-existence", signifying the relation of mutual non-interference between the capitalist and the communist countries, has in recent times gained some importance in the field of international politics' (p. 74). The fact is worth noting that while Marxism could hardly be practised, the capitalist countries introduced quick changes to remove the grievances of the working class. But this fact does not disprove Marxism which is still found working in industrially backward country. We find that a group of communist countries are emerging in recent times, though the idea of world communism, as visualized by Marx and Engels, still remains a utopia. The author regrets the emergence of different forms of nationalism under new grabs. He feels that 'communism as distinguished from humanism and even orthodox Marxism, is, like capitalism, allied with Nationalism'. It has proved to be obsolete and is an obstacle in the realization of the ideal of man in a society. The author stresses that the real cause lies in the fact of original ignorance which has not been completely removed till today.

In the third part of the book, the author foresees the future of humanism. The solution of the problem of human suffering is suggested in the establishment of the relation of fellowship. The author investigates if the original ignorance of man is causally connected with human suffering, and attempt at an examination the possibility of the elimination of various kinds of human suffering. The original ignorance, according to him is due to man's being stranger to the world. The ignorance can be removed with gradual *acquaintance* and *knowledge* of the world around by scientific upbringing of man. We only hope that the learned author is fully aware of the hydra-heads of modern science and advanced technology.

Prof. Banerjee states that Buddha's 'treatment of the humanistic problem is planned in a scientific manner' (p. 83) and this is clear enough in his analysis of the second Noble Truth which traces the cause of suffering to ignorance. The same scientific spirit which has been attributed to Marx throws light on the problem of suffering of the working class. According to Marx, the specific science of historical sociology holds key to the problem of human suffering, while the author sees through the limitations of science. Prof. Banerjee thinks that the phenomenon of egoity is peculiar to man. Animals are governed by the biological laws of natural selection and survival of the fittest whereas man is a class apart. The author feels that science is concerned with the knowledge of facts whereas establishment of human fellowship is a normative demand and therefore the latter undergoes change with the changing of the world. Mere interpretation of facts, the main aim of science, would not help us much. The fulfilment of our obligation 'is amenable to revolution in the light of wisdom'. In this respect, the Buddhist view is not scientific, at least not in the sense suggested by the author. But in the process are we not landing in a sort of metaphysics which is against the spirit of humanism as defended by the author?

In the same manner it has been stated by the author that Marx like Buddha upheld the way of wisdom in his treatment of human problem of suffering. Marx's realization of the need for changing the world is characteristic in this connection. It is noted with displeasure again that Marx's suggestions to eliminate suffering of the industrial proletariat have not been put into practice. The author notes that Marx restricted the scope of humanistic outlook to the fact that the problem of human suffering is perennial and has no necessary connection with specific human situation whether social, political or economic. The way out of the problem is found in wisdom which was realized by Buddha in ancient times and Marx in our times.

Prof. Banerjee remarks that in the doctrine of *ahimsā*, as advocated by both Jainism and Buddhism, the problem of suffering was not limited to human beings alone but also to all sentient creatures. Moreover, it is suggested by the author that the causes of suffering lie not only in human conflict but also in natural calamities. And he hopes that with the help of science and technology man would be able to control them in future. In view of the fact that science and technology are being persistently put to wrong use is this optimism justified?

The author admits that a complete way out of human suffering seems impossible. It is suggested that one should adopt a middle way between the extremes expressed by the Stoics and the *Sāṅkhya* school of Indian philosophy, the former stressing on the endurance of suffering and the latter on its complete elimination. According to Prof. Banerjee, 'the aim of humanism is to bring into existence 'the best possible world', that is, a world where human suffering is reduced to a minimum, instead of the most perfect world regarded as being altogether devoid of human suffering' (p. 92).

While observing the impact of culture on the human situation, the author has noted that religion has proved to be a divisive force by putting a wedge between one group of people and the other. It is one of the major causes of violence. It is suggested that religion, art and morality are in 'need of being changed into the ways, which will bring man to strictly human level'.

The evil influence of social institutions—religious, educational, political, etc.—on man is keenly observed and the author comes out with the statement that 'all social institutions are apt to beget evils which are in need of elimination' (p. 104). He maintains that the government and the state are not sufficient in establishing peaceful relations among the individuals. He points out how Christian religious institutions indulged in violence. At one place he says:

> During the middle ages and even in many a subsequent century there has been no institution more aggressive than the Catholic Church. As regards Protestantism, although it owed its origin to the most adverse reaction of Martin Luther against the misdeeds of the church of Rome, it has not proved to be a religion of peace, but, on the contrary, has, through its

influence upon government and state, brought about, a human situation in which wars have been no less rampant than before.' (p. 108).

The same can be said about other religions also. History is replete with instances of how corrupt practices found this ways into various religious organizations. But the misuse of religious authority and power was in no way connected with the early humanistic teachings of those religions. The magnitude of corruption which was so rampant in the later Buddhist organizations did in no way lower its early humanistic teachings, in spite of the fact that author maintains cryptic silence over it.

The author has briefly discussed how religious corruption was slowly removed with the growth of scientific knowledge. The replacement of one system by another, as visualized by Marx, is not above reproach. Marx's dream of the emergence of communist society when the states slowly wither away is yet to be realized. No communist worth the name claims the establishment of a communist society so far. It is in fact, in the transitional stage.

Let us see how the author looks into the impact of science and technology on human situation. The other impacts have already proved to be distressing. Science has been expanding its area of exploration, and it is an irony that man has also been brought within the scope of scientific study like other objects of the universe. The role of technology is rightfully commended by the author in the fulfilment of the biological needs of man. The ills have been noted with disgust which gradually developed with the industrial revolution. The race for armament is one of them. It includes loss of earlier social values, especially the '*spiritual* imopverishment of man'. Interestingly enough, in developing a humanistic ideal Prof. Banerjee seems to be struck by man's *spiritual* impoverishment. It is not at all clear why to a propounder of humanism the loss of spirituality appears so striking. Apparently he is pained to see the rise of the cult of violence, both direct as well as devious. He painfully observes 'that vast masses of humanity in different parts of the world lie crushed under the unbearable burden of want and poverty, the expenditure of collossal amounts of money on space flight cannot hide its disguise as a way of inflicting violence upon mankind' (p. 118).

Prof. N.V. Banerjee appears to be conscious of the dangers of technology which has been so bountiful to man but which may ultimately be responsible for his total extinction. It may be remarked that all these dangers which the learned author apprehends are rooted in the exploitative nature of the society which is governed by the capitalistic mode of production.

Towards the end Prof. Banerjee proposes to give his own alternative account of humanism,—alternative to the Buddhist one and the Marxist one. He argues that humanism is not merely a theory but a practical outlook. The chief task is still the elimination of suffering as far as it can be done. The unity of theory and practice was fully realized by both trends, especially by Marx who advocated change of the world instead of its interpretation. The

author notes with interest that fraction of the above truth found a place in pragmatism and it has been argued that William James 'failed to reach humanism'.

The author contends that man must be looked upon as an agent whose responsibility is to perform task; man cannot be placed in the category of being or becoming like other objects. The task consists in rising from the biological needs of man. Prof. Banerjee feels sorry to note that science, technology and the established social institutions have not yet been able to forge the unity of humankind? According to him, Marx 'could not reach the height of wisdom at which Buddha was well established' (p. 123). Marx confined his concern to the suffering only of the working class. Here it may be observed that Prof. Banerjee is concerned with suffering in a special sense. Given this sense, is he not again drifting towards Metaphysics?

Prof. Banerjee gives his own formulations of three fundamental principles of human conduct for the practice of humanism in a negative tone. The first principle directs one not to act by ego-consciousness. The second one directs that the action should not be determined by the dread of death or by the desire for personal immortality, and the third one exhorts that one's action must not be dertemined either by aversion or reluctance to bear the cross. The author feels that the principles are derivable from the teachings of Buddha, and may be viewed as regulative principles.

Prof. Banerjee sees in science the quality which can eliminate original ignorance of man. Technology is essential but one should be cautious of its destructive nature. Regarding state it is observed that it is 'capable of inflicting incalculable harm upon man.' Prof. Banerjee gives an alternative 'idea of the inter-existence of states' which is radically different from internationalism but such states must be free from nationalism which is a potent social evil. He seems to be landing in an era where there could be inter-states but 'citizen of one state would cease to be foreign to another...every individual would have the proud privilege of becoming a citizen of the world' (p. 130). The author desires that the principle of love taught by Buddha and Jesus must be translated into practice which will bind humanity together. He seems to be emphatic that 'the benign influence of love' will have its effect on the process of humanization over religion, art, morality, science and technology. This is the culmination of humanism where love will establish its dominion over the entire sphere of human affairs. Are we not reminded of the humanistic teachings of Jesus and Buddha in the 'principle of love'? A staunch supporter of humanism having no relation with any metaphysical principle, Prof. Banerjee develops it from the religion of Buddha and the teachings of Marx which seem to have many common concerns for human beings, human suffering being the pivotal point. How can the 'principle of love' be set into practice? Banerjee seems to be silent here.

The author has pointed out various weaknesses of Buddhism and Marxism in a critical manner and has developed his own alternative doctrine of

humanism. He has tried to encompass the two vast currents of thought in a concise manner and it deserves a special mention.

His critical remarks on various religions, especially Christianity, at some places give a feeling that religion has proved to be a divisive force, though it remains yet to be seen whether this tendency would continue or vanish, especially when different religions are having a dialogue among themselves with a view to establishing a harmony. It is yet to seen what force brings mankind together, whether an awe of extinction or the 'principle of love' whose practice has been advocated by Prof. N.V. Banerjee.

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SUSAN M. EASTON, *Humanist Marxism and Wittgensteinian Social Philosophy*, Manchester University Press, 1983, pp. 148.

The students of philosophy now-a-days are equally aware of the growing importance of both Marx and Wittgenstein. Though familiar with their ideas, we rarely club their names together, for they represent two distinct philosophical trends. Marx is the representative of a very widely accepted continental social philosophy, while Wittgenstein prefers to pursue the prestigious Anglo-Saxon empirical thoughts.

In her interesting work, *Humanist Marxism and Wittgensteinian Social Philosophy*, the author wants to open up a dialogue between these two distinct trends. In contrast to the ordinary belief that Anglo-Saxon philosophy supports the divorce of theory from practice, the author succeeds in showing the impact of Wittgenstein's ideas on social philosophy.

Besides highlighting the social relevance of Wittgenstein's ideas, the book seeks to defend the basic principles of humanist Marxism, and this has been served in a round-about way 'via an examination of Wittgenstein's key ideas'. Perturbed by the prevalent tendency of emphasizing Marx's rejection of humanism in favour of scientism, the author argues that a humanistic approach, even with its Hegelian bearings, provides a more fruitful source of concepts for the analysis of modern society.

The author rightly focuses on the functional analysis of Wittgenstein's *Investigations* and shows how his use of language, within a plurality of contexts, reminds us of the Marxian ideas. But how Wittgenstein's primarily representational view of language as expressed in *Tractatus* leads to such a functional analysis has not been worked out in persuasive details.

In Chapter I, the author discusses the epistemological presuppositions underlying the Marxist view on ideology. Here the Wittgensteinian concepts are employed to contrast them with the empirical-realist ones. Unlike empiricism, Marxism shows us how historical and sociological factors determine

our knowledge and ideology. Both Marx and Wittgenstein will agree that, though the objects of knowledge may exist independently of men, our knowledge of those objects is certainly a social product and has social consequences too.

In Chapter II, an attempt is made to analyse the essence-appearance distinction of Marxian epistemology in course of elaborating how a proper theory, by generating 'emancipatory consciousness', can create the conditions under which apparent, ideological distortions can be removed and, in its place, a true, practical discourse can be achieved. Here the author notices 'striking similarity between humanist Marxism and Wittgensteinian social philosophy: both are found to be interested in systematically distorted communication and both see philosophy *qua* self-reflection as a means of freeing us from the "bewitchment of our intelligence" by language' (p. 28). One may be in agreement with this spirit, but even then it seems to me that the author has made a rather sweeping statement; for she has not adequately justified her stand, at least not from the standpoint of Wittgenstein.

In Chapter III, we find discussion regarding the fact-value distinction giving way to two different interpretations of Marxism: (*a*) Marxism as a science and (*b*) Marxism as a moral theory. Drawing on the ideas of some contemporary writers like Taylor and Gould, the author throws light on how both Marx and Wittgenstein transcend such overemphasis on either fact or value.

In the following chapter, the author presents us with the similarity between the Marxist notion of a world-view and the Wittgensteinian notion of a *Welt-bild* (world-picture). By the Marxian notion of world-view the author mainly refers to its use by Goldmann, who makes use of Marx's insights into social life primarily in the context of literature. Goldmann's method of understanding literature, which is known as 'genetic structuralism', has been seemingly influenced by Lukács' concept of totality. In his work, *The Human Sciences and Philosophy*, Goldmann develops humanistic Marxism in such a way that this notion of world-view 'serves as a possible bridge between Marx and Wittgenstein' (p. 69).

As to Wittgenstein's concept of world-picture, the author draws primarily on his posthumous publication, *On Certainty*. For Wittgenstein, a world-picture is the common ground that must be shared with others for making communication possible. Insetad of trying to understand beliefs, ideas or judgements in isolation, both Marx and Wittgenstein see them as part of a system of belief which ends up in a world-view or world-picture. Further Easton hints very significantly at the various similarities between these two notions, delineated, of course, from two different perspectives. But the line of argument often seems a bit ambiguous.

The discussion passes on from description of world-view and *welt-bild* to the consideration of possible objections against attempts of relating humanistic Marxism to Wittgenstein's social philosophy. Even amidst her enthu-

siasm for bridging over these two apparently diverse perspectives, the author does not forget that the Marxian notion of world-view and the Wittgensteinian concept of world-picture may be equally vitiated by the charge of relativism. She rightly raises the pertinent question that if our ideas are influenced by our class position (as in Marxism) or by a special form of life (as in the case of Wittgenstein), how can we free us from the charge of subjectivism? Or, in other words, how objectivity can at all be achieved? Here Easton directs the reader's attention to some tantalizing problems of sociology of knowledge. But she does not remain content with that only. A way out of the *impassé* is suggested by her, but that is unlikely to satisfy everybody.

It is well known that Marxism is often vulnerable to the *tu quoque* charge, so far as Marx's views on science and ideology are concerned. But here the author, following the footprints of Lukács, shows how Marxism can free itself of this charge and can also avoid the danger of 'Protagorean relativism'. Here her discussion on Marxism overshadows Wittgensteinism and it is not clear whether Wittgenstein, if interpreted in the above way, can really be exonerated from such charges.

In the concluding chapter Easton discusses those topics which were of common concern to both Marx and Wittgenstein. She feels that their common commitment to an 'emancipatory' outlook of philosophy is manifested in Marx's description of philosophy as a major weapon of the working class and Wittgenstein's use of philosophy 'to shew the fly the way out of the fly bottle'. Here the author refers to Wittgenstein's discussion in his *Culture and Value*. But even in her discussion of such inherent similarities of the two eminent thinkers, the author does not ignore their glaring differences, e.g. on the question of their political attitudes.

Speaking as a whole, the book provides some very current as well as illuminating discussions of Wittgenstein's social thoughts in their relationship to Marxian conceptions. Such discussion of Marx and Wittgenstein, though not very frequent, often reminds us of another interesting work by David Rubinstein, *Marx and Wittgenstein: Social Praxis and Social Explanation*, which was published earlier and in which some issues of the philosophy of social science were discussed from a different, mainly methodological, standpoint.

The relevance and importance of interrelationship between the two disciplines, in the context of growing popularity and reassessment of both Marx and Wittgenstein in the present days, cannot but be admitted. The chief merit of the work under review lies in focusing its attention on the scope and possibility of developing such interdisciplinary relationship.

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KRISHNA ROY

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(b) References to published works are to be made in the body of the paper and *not* in footnotes. The references, written in parentheses, should include the name of the author and the year of publication, e.g., (Thinès 1977); where necessary the page(s) referred to can be made part of the reference as follows: (Thinès 1977: 50-51). When a citation refers to two or more works written by an author in the same year, letters 'a', 'b', etc. are to be added, e.g. (Thinès 1977a, 1977b). The first reference to a work written by two or more authors should include all names, e.g., (Whyte, Wilson, Wilson 1969) in the subsequent citations to the same work 'et al.' should be added to the first name, e.g., (Whyte et al. 1969). If a citation at a particular point in the text alludes to separate works the latter should be put in a single pair of parentheses; works by the same author are to be put together separated by commas and are to be separated from others by semicolons, e.g., (Elsasser 1958, 1966; Eccles 1970; Centore 1966).

(c) All works cited in the paper are to be listed at the end of the paper in alphabetical order. Here is an example, with punctuation marks, to show the listing of references at the end of the paper. Journal titles must *not* be abbreviated.

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Phenomenology and the science of behaviour. London: George Allen & Unwin.

Whyte, L. L., Wilson, D. 1969 (eds.)
Hierarchical structures. New York: American Elsevier Press.

Whyte, J., Krippner, S. (eds.) 1977
Future science. New York: Doubleday & Co.

Russell, E. W. *The fields of life*. In Whyte, Krippner (eds.) 1977.

(d) For Book Reviews, the title page should contain the title of the book under review with the sub-title, if any, and the name of the publisher along with the year of publication, number of pages, price, e.g.,

GEORGE THINES, *Phenomenology and the science of behaviour: an historical and epistemological approach*. London: George Allen & Unwin, 1977, 174 pp, £ 8.95.

The name of the reviewer with his affiliation is to appear at the end of the review article.

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