Journal of Indian Council of Philosophical Research

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Journal of Indian Council of Philosophical Research

MAY-AUGUST 1993

ISSN 0970-7794

Journal of Indian Council of Philosophical Research

JICPR

Editor DAYA KRISHNA

VOLUME X NUMBER 3
MAY-AUGUST
1993

JOURNAL OF INDIAN COUNCIL OF PHILOSOPHICAL RESEARCH

Volume X
Number 3
May–August
1993

Editor: Daya Krishna

Indian Council of Philosophical Research
Rajendra Bhavan (Fourth Floor), Deen Dayal Upadhyaya Marg
New Delhi 110 002, India

Articles published in this journal are indexed in the *Philosophers' Index*, USA.

Printed in India
at Chaman Printing Works, New Delhi 110 006
and published by Professor Bhuvan Chandel, Member-Secretary
for Indian Council of Philosophical Research
Rajendra Bhavan (Fourth Floor), 210 Deen Dayal Upadhyaya Marg
New Delhi 110 002

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The Meaning of Diversity in Philosophical and Religious Traditions*

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A commonly accepted definition of philosophy seems hardly possible to be given. Something which happens to be considered as genuine philosophy by a certain school or tradition may well be considered as being bad philosophy or even no philosophy at all by differently oriented thinkers. Most of the analytic philosophers, for example, used to consider metaphysical investigations of the traditional kind as vague and uncritical speculations that hold no water while, on the opposite side, metaphysically minded philosophers often claim that analytical work is just a kind of marginal descriptive exercise, which does not even enter the core of what deserves to be called a philosophical inquiry. As is quite clear, all this has nothing to do with accepting or refusing single *solutions* to some specific problem, but, rather, expresses an intellectual attitude which predetermines the conceptual space within which a certain problem may or may not be formulated as being 'philosophical'. In other words, this means that we are confronted with different paradigms of philosophy, which are in general mutually exclusive or at least difficult to be brought to a real conciliation.

If this is already true within a single philosophical tradition (in our example, the Western tradition), it becomes much more evident when different philosophical traditions are compared. Indeed, it is well known that, according to a certain rather common way of thinking, philosophy in a *proper* sense is a characteristic feature of Western civilization, to which some thinkers belonging to other cultural areas could (and can) have *access*, only to the extent that they are able to learn and practice the intellectual style of Western thinking, through a kind of mental conversion similar to the procedure by which people of different countries can become familiar with the contents and methods of (Western) natural science. What is at the same time interesting and puzzling in this view is that philosophy (and science) are believed to be *universal*, though being intrinsically rooted in a single cultural tradition. This universality is under-

* Presidential Address delivered at the Third Afro-Asian Philosophy Conference held at New Delhi, 16–18 October 1992

stood as the fact that philosophical and scientific statements are *intrinsically* valid, and are open to the scrutiny of any human person, provided this person is able to operate the above mentioned conversion and (at least in this respect) to become an adept of the Western way of thinking.

According to this approach, what we can find in other cultural traditions may be something *similar* to philosophy, such as 'wisdom', 'pre-philosophical intuition', 'sage thinking', 'implicit philosophical views', but not philosophy proper. These are, so to speak, materials which may receive a philosophical dressing, provided they are duly interpreted and reformulated according to the recognized (i.e. Western) philosophical categories and arguments. This approach has been challenged in the last decades, especially in the context of the discussions regarding the existence and the features of African philosophy, American pre-Hispanic philosophy, and also Oriental philosophies. We are not going to analyze these debates now, but we want rather to discuss certain conceptual issues which represent the prerequisites of these discussions.

DOES WESTERN PHILOSOPHY FOLLOW A UNIQUE PARADIGM?

It is not difficult to relate many of the opposite attitudes regarding the genuine way of philosophizing which can be found within Western philosophical schools, as well as differences in the traditions that the philosophical investigation has followed in different countries (for example, analytical philosophy is typical of the Anglo-American world, while traditional metaphysics is rather bound to the European continental thinking), but this does not clarify the issue completely, as one major question remains unanswered, i.e. why do each of these intellectual attitudes claim to be the genuine expression of 'philosophy' proper? Sometimes it is said that this happens because there is a common root, with respect to which all claim to be tied up along a non-degenerating line: this root would be the ancient Greek thinking, which should have determined once and for ever the model of philosophizing. But, needless to say, even such an answer could not help us very much, as there is not very much in common, as far as the style of philosophizing is concerned, let us say, between Plato, Aristotle or Plotinus. Even ancient Greece, therefore, offers us a display of philosophical paradigms rather than a single model. If we then consider the long historical development of Western philosophy, the differences in style, in topics, in the links admitted with religion, theology, science, and so on, become more and more important, so that one must recognize that every age, every historical moment, has its own 'philosophy' (understood not as a particular system, but as a way of philosophizing), and inevitably tends to evaluate other 'philosophies' according to its own standards and criteria. In conclusion, the alleged unity of Western philosophy does not consist in the adoption of a unique

model of thinking, but is rather a phenomenon of historical continuity, in which a plurality of styles have been present.

IS A THEMATIC CHARACTERIZATION OF PHILOSOPHY SUITABLE?

Another factor of ambiguity (which is nevertheless also indicative of some symptomatic general background) is represented by the well-known statement that 'every man is a philosopher'. Literally taken, this claim sounds quite superficial, as it might be taken as an underestimation of the importance that must be accorded to professionality and technical competence in philosophical matters. Still it may be considered more positively if it is understood as expressing the view that the philosophical attitude corresponds to some primitive need of man, being deeply rooted in his specific nature. If we try to submit the said statement to a closer scrutiny, we can find that it hints at the fact that everyone has his own global vision of the world, his general perspective on his place and role in nature and society, his ultimate sense of life, his beliefs about values, duties, final destiny, existence or non-existence of supernatural beings, and so on. If this is true, philosophy proper could be seen as a kind of disciplinary development of such kinds of problems and themes, as a full explicitation of them, as an effort to develop appropriate answers to the questions involved.

But in such a way, if philosophy is considered as being characterized essentially by its thematic domain (or domains) it turns out that the specific 'language' (at large) in which and through which it may develop is rather immaterial: not only a critical-systematic, but also a symbolic, a poetic, an artistic, a mythical language could be used on an equal footing. Are we ready to fully accept this kind of consequence? Is the way of 'expressing' one's philosophical attitude really immaterial to its becoming a 'philosophy' in a genuine sense? It is by no means easy to give a direct answer to this question and we need to go into further details before we can evaluate this point correctly.

THE INTELLECTUAL ATTITUDE OF PHILOSOPHY

It seems appropriate to characterize the conceptual horizon of philosophy by seeing it as an inquiry which tries to situate itself from the 'point of view of the whole'. This means, first, that nothing could be considered as alien to philosophy (nature, man, God, freedom, death, law, art, science, etc.), but this means as well that every single topic which is the object of a philosophical inquiry should be investigated 'as a whole', and not simply under some particular viewpoint. So, for instance, philosophy of man cannot be identified with psychology, sociology, anthropology, linguistics, etc., which all consider man from specific and restricted angles, nor as a kind of sum total of these particular disciplines, but rather as an effort of

extracting from the information provided by these sciences (and several others as well) a global picture of man, which also takes care of other aspects which are not at all the subject matter of scientific investi-gation. Moreover, this picture of man turns out to be intrinsically related to other branches of philosophy (e.g. metaphysics and ethics), both in the sense of being influenced by them and of having influence on them. Similarly, a philosophy of time is different, let us say, from relativity theory, in which a particular 'scientific' approach to time is developed, although it must take the content of this theory into fullest account. It has even to investigate general conceptions of time which may count as tacit presuppositions or as implicit consequences of the relativity theory, even if they lie outside its strict domain of interest.

Once this is accepted, one sees that a plurality of methods may be adopted to bring this 'viewpoint of the whole' to its manifestation. Only one condition seems to be needed, i.e. the effort of explicitness. Certainly this effort can reach very valuable results if it is performed by means of the powerful tools of 'logos', i.e. according to the different levels of deepening which are connected with careful conceptual and logical analysis, with accurate and testable interpretations, with cogent arguments which provide sound justification of the asserted statements. Still we are not entitled to reject other tools: let us only mention the peculiar force intrinsic to some Platonic myths, or the powerful insight into the secrets of the human soul that we can find in certain pages of Dostoevsky or of other artists.

In this way we have found a certain answer to our previous question: in a way it is possible to characterize philosophy thematically, i.e. as the intellectual reflection on those 'general problems' which concern all human beings and would lead us to say that every man is a philosopher, since these general problems are expression of that adopting of the 'point the view of the whole' in which we have indicated the most typical feature of philosophy. On the other hand, it is not correct to say that every man is a philosopher, because no less essential to philosophy is the *explicit thematization* of these global problems, and a *conscious reflection* on them, by which one tries to attain defendable answers on the basis of sound arguments. Even admitting a reasonable freedom in the *forms* adopted by such arguments, we cannot simply dispense with them, if we want to remain within philosophy, and in this sense philosophy is a specialized human activity, that cannot be trivialized and put on an equal footing with the spontaneous and non-motivated 'implicit philosophy' of the man in the street.

PHILOSOPHY AS SELF-CONSCIOUSNESS OF CULTURES

What we have been saying about the 'implicit philosophy' possessed by every man (which can give rise to an 'explicit philosophy' under suitable conditions, i.e. if this man concretely *becomes conscious* of his spontaneous

convictions and begins to submit them to critical examination and consistent development) may help us now in understanding that in a quite similar way an implicit philosophy may be possessed by a community of men and, in a broader sense, by a culture. Indeed it is one of the best known facts that men tend to form groups of the most different sorts on the basis of the acceptance of some common goals, ideals, and norms, that 'characterize' the group, and the less 'artificial' or 'ad hoc' the group is, the more this basis is made up of general ideas concerning the world, man's relation to nature and to other men, moral obligations, religious beliefs, and so on. In other words, human communities are always rooted in some 'implicit philosophy' which is usually more articulated and richer than the implicit philosophy of a single individual, at least because it mirrors to some extent the contribution of a great deal of individuals, not only presently existing, but also having existed in the past.

When we speak of 'cultures', all we said so far becomes twice as patent and decisive, for the factors which enable us to single out a culture and, so to speak, to individualize it, are almost all of an 'ideal' nature. As a matter of fact, a culture is determined by a great deal of 'elements', such as customs, ways of producing, of dwelling, and of living together, by social hierarchies, institutions, laws, unwritten rules of personal and social behaviour, public ceremonies, ways of celebrating special events like births, marriages and deaths, and religious rites. But these are by no means simple 'facts of life', or isolated bits of behaviour: they all carry and express some 'meaning', and the set of such meanings constitutes a kind of net, which is the expression of a certain world-view, of a certain 'conception of the whole', that is to say of a certain 'implicit philosophy' in the sense described above. It is this basic and often implicit philosophical core that characterizes every single culture, makes it typical with respect to others, that gives different meanings to materially similar kinds of behaviour in different cultures, and explains the relevance and the value that are attributed to specific acts or facts within a given culture and not within another. Moreover, it is this core that not only oversteps the individual, making him a participant agent of his culture, but also oversteps in time the actual configuration of a culture, giving it that most characteristic feature which we call 'tradition', and which represents a kind of continuity in time, a kind of stability which is compatible with a slow historical evolution.

The said core usually remains latent and implicit. But from time to time some great persons appear, who take the explicit consciousness of certain basic constituents of this core, and give them a voice to become manifest and explicitly stressed. They dig out the general views on the world and life that are mostly shared in their community, and point out values that are typical of it, sometimes supporting them with approval, sometimes criticizing them and proposing amendments or even rejection. When this happens, we can say that a real 'philosophy' is being proposed, and it does

not matter if it is expressed by a poet, or a 'sage', rather than by a 'philosopher' as we conceive of him in a professional sense, provided this work of reflection and conscious deepening is present.

Along the above outlined path, the philosophy of a given culture comes to light gradually, and gives shape to its basic themes, its preferred domains of inquiry and its methodological standards: a philosophical 'tradition' consolidates what is at the same time the deposit of past wisdom and speculation as well as an inspiring source for further investigations. Every philosopher inside this culture is unconsciously affected by this atmosphere but, on the other hand, he puts forth his own original contribution which enriches his tradition and deepens the understanding of its 'eternal problems', together with the possibility of uncovering new ones, and of giving new answers to traditional issues. It is in this sense that philosophies may be understood as stages in a continuous process of self-consciousness of cultures. Not only because they bring to light and submit to critical analysis, to deepenings and expansions, the values, the goals, and the dimensions of sense which inspire a culture, in the variegated display of their variants and their oppositions, but also because they express the way in which cultures are confronted with the changing conditions of their existence in the world and history. If philosophy, as Hegel once said, is one's time apprehended through thought, nothing could be a better expression of this claim than the idea of philosophy being the self-consciousness of cultures. This idea, by the way, helps one to understand the fact (which is quite often put forth as evidence of the futility and lack of soundness of philosophy) that philosophy is a set of many hardly reconcilable doctrines which all claim to be true, or that no philosophical problem has been able to receive a universally accepted answer through the whole of history. Such a fact is no longer perceived as a kind of scandal of reason, once we understand that the different doctrines reflect different moments and forms of self-consciousness that a given culture may reach when confronted with changing conditions in the course of history, or that different cultures are led to bring about, in a given historical moment.

But there is even more than that. The intrinsic ideals, conceptual frameworks, and existential attitudes which inspire a culture are not at all one-sided and mono-chromatic: variety and tension are among them no less frequent than unity and harmony. This is why one and the same culture usually expresses a variety of philosophical doctrines even within the same historical context: this happens because different components of its spiritual core are brought to consciousness, are made explicit and are stressed with special attention and vigour, and are submitted to a process of critical appraisal, sometimes implying approval and sometimes rejection by the philosophical minds.

THE CONDITIONS FOR A TRANSCULTURAL DIALOGUE

The above reflections give us some indications about the possibility and the conditions of a transcultural dialogue. They do not differ very much from the conditions of an interpersonal dialogue: the first requirement is an effort of sympathetic comprehension with respect to the values, the parameters of judgment, and the ways of approaching existential problems which are fundamental in the 'other' perspective, and which may well be at variance with 'ours'. We must be ready to admit that they cannot be 'wrong', or 'naive', or 'old fashioned', if they have the force of permeating the interior world of our partner, inspiring his behaviour, giving a sense to his life, and orienting his most vital choices. Surely such a sympathetic attitude seldom arises under the form of an immediate friendly contact: the first and immediate impact rather tends to produce a reaction of isolation and self-defence. But a positive attitude becomes possible once we bring to explicitness and consciousness the points of difference which create some kind of opposition between us and our partner, and in such a way, we become able to evaluate the 'reasons' for them. At this stage we are ready for comparison and understanding, for we no longer perceive these discrepancies and oppositions as the expression of some obscure and latent hostility, but rather as projections of a different personal or cultural background, which certainly contains several components that are interesting, respectable and even valuable for us as well.

It is quite clear that the above sketched process of comprehension has all the basic features of that intellectual attitude of explicitation and self-consciousness which we proposed to call 'philosophy' in the most genuine sense. Hence philosophy appears at this point as the most powerful and hardly dispensable tool for interpersonal and especially for transcultural dialogue. Indeed, while a current of human sympathy may often help us very much in establishing an excellent relation with another person, in spite of several discrepancies between the worlds of our respective personal convictions, such a psychological support becomes negligible when we are confronted with that more abstract entity such as an alien 'culture'. In this case almost everything must pass through the filter of an intellectual investigation, which is primarily of a philosophical nature.

Still not any kind of philosophical penetration can produce the result of a positive dialogue. As a matter of fact, philosophical analysis and argumentation have been used most of the time as tools for criticism, for refutation, for elimination of other rival doctrines, and we cannot really say that in our days such a use of philosophy has come to an end. This may happen for essentially two reasons: one is that philosophy is often used as a tool for ideological struggles, and it therefore becomes affected by the attitude of intolerance and aggressiveness which is typical of ideologies. The second reason resides in the fact that philosophical doctrines, especially when they are concerned with the central issues of human existence, very often conceive themselves in a light of *absoluteness*, that is

to say that each one of them claims to be the only true perspective on the 'whole', while other doctrines cannot help being, at best, only partially true, i.e. true to the extent that they are able to approximate the statements, the principles, the methodological requirements of the absolute doctrine. Needless to say, such an attitude is not only a serious obstacle to a real comprehension of other doctrines, but it can lead, even in the most favourable circumstances, only to an understanding without dialogue. In order to reach the level of a dialogue one must abandon, at least initially, the claim of absoluteness for his own philosophy, and understand that this too is somehow related and relative to his own culture. In other words, not only do we need to consider philosophies as self-consciousness of cultures, but we also need an additional self-consciousness of philosophy itself which leads us to recognize this very fact and hence, its being culture-dependent.

CULTURAL RELATIVITY DOES NOT MEAN RELATIVISM

Is this cultural relativity a necessary precondition for a transcultural dialogue? The answer to this question must be partially positive and partially negative. It must be positive in the sense that cultural relativity favours the elimination of too hasty claims to privilege, which could entitle whatever philosophy to be the supreme court that judges other doctrines, world-views, principles, and values. On the other hand, it must be negative, because it is not cultural relativity in itself that could open our minds, but only the 'consciousness' of such a relativity. For if one is fully embedded in his culture, but still believes to make absolute judgments, or is conscious of his being culturally-dependent, but on the other hand considers his culture as the only legitimate, or as the most perfect, he will not adopt an open attitude towards other cultures. Cultural relativity is therefore a positive condition only as far as it becomes conscious and, by this very fact, also overcomes itself. But in this way we seem to be left without any ground not only for transcultural dialogue, but for a simple transcultural understanding as well, for as long as we believed that our culture expressed some kind of absolute standards, we could hope to rely on them for understanding others. But if even the intellectual tools of philosophy are culture-laden, a kind of cultural solipsism seems unavoidable.

All this is true but, actually, the real situation is not that bad. Indeed there is a common ground for transcultural as well as for interpersonal comprehension, and this is 'humanness', which is the 'genetic' condition of every culture and the root of all its facets. In fact, we can consider every culture as the special way in which groups of individuals sharing a common humanness react to the historical and environmental conditions in which they are located. Of course, within every single culture this humanness has been led to express and develop only a limited number of the constituents of its extraordinary genetic richness, according to the

stimulations exerted by the concrete conditions characteristic of the different historical and environmental situations it has been submitted to, and this explains quite well the differences between different cultures. But this does not mean that other components, which remained less developed, were eliminated. We can therefore deduce, first of all, that a respectable lot of such components developed, in a rather similar way within the different cultures, as a consequence of a similarity in the external conditions they happened to be confronted with. But secondly, we can also understand that even those components or constituents of humanness which were especially developed inside one culture, while being very little stressed inside another one, cannot remain completely alien and incomprehensible to the latter, for they too germinate from some 'human' seeds which are present (though maybe in a rather concealed way) in its deep roots as well.

Among such common seeds or roots there is in particular also the 'critical' sense, the need for intellectual clarity, the effort towards explicitness, the quest for 'reasons', that is to say the set of constituents which make up the core of the philosophical attitude. A very precious character of this critical attitude is that we can apply it also to ourselves, and ask for the proper foundation of our basic tenets and views. Often the consequence of this is the elimination of dogmatism and an attitude of sympathetic open-mindedness with respect to other systems of ideas and values which are, in the end, the first steps of transcultural dialogue. We can see therefore that the sharing of a common 'humanness' is a necessary, objective, and, so to speak, 'ontological' precondition for this dialogue, but it is not sufficient as long as its presence is not made conscious and articulate by means of a 'philosophical' reflection. This suggests to us as a kind of conclusion not only that 'philosophies' are the expression of the self-consciousness of cultures, but also that 'philosophy', understoood as the very attitude of such a self-consciousness with all its implications, plays the role of a 'human' message of universal range, and here we find the ground for distinguishing 'relativity' from 'relativism'. Relativity after all, means 'limitation': it indicates that a given view is only partial, but still *intrinsically valid* within its limits, and its validity may be recognized with reference to a deeper level of 'human' comprehension. Relativism, on the contrary, usually means lack of intrinsic validity. Consciousness of cultural relativity allows for full appreciation of what is valid within other cultures, and also entails the possibility of an attitude of acceptance and adoption of what is 'alien' but might also become 'ours'; relativism leads to a sceptical attitude not only regarding others' view, but, in the last analysis, also regarding our own values and principles.

THE CASE OF RELIGIONS

It is much more difficult to apply the above line of reasoning to the mutual understanding of religions, because they share with philosophies the

feature of being all-embracing, of expressing a 'point of view on the whole', but, at variance with philosophies, they are usually considered to be *absolutely true*. This happens for several reasons. The first is that adhesion to a religious creed is based upon *faith*, and not upon rational critical investigation: Even when a great deal of rational work is done within a religious framework, like in the different theologies, this work is not expected to provide as a *result* the acceptance of the religion in question, but rather to show that the religious truth (which is given independently through some kind of revelation, inspiration or illumination) is *also* rationally understandable, at least to a certain extent. The second reason is that religious doctrines are meant to provide men with the sure path to *salvation*, understood in the deep sense of the unique way in which our life is not going to be lost, so that abandoning, or even submitting to doubt, one's religious belief amounts to putting in question one's global sense of life, and this is something that is not easily accepted. The third reason is that men are usually introduced to a religious faith from the beginning of their existence, they grow with it and become accustomed to its tenets without any work of critical reflection, so that beginning such a critical investigation usually amounts to casting doubts on the very fundamental structure of their existence. A fourth reason is that, in most cases, the warranty of the truth of a religious doctrine is believed to be given by God himself, who has revealed this truth to certain privileged persons, or continues to assist certain persons in explaining and proposing this truth. Therefore, that which is given by God himself cannot be anything other than the *only* truth and the *complete* truth, and other religions must necessarily be wrong.

Is there an honest possibility of applying the notion of cultural relativity to religions, without depriving them of their specific characteristics? It is certainly possible, provided one is ready to accept that religions, though being directly related to the divine, still remain a *human* construction in a substantial sense. Let us propose an analogy. It is certain that the universe, though being open to human investigation, largely oversteps, in its richness, the possibility of the understanding and explanation of a single individual, and also of a single generation or of a single culture. Even by considering the whole display of the modern sciences, we are aware that we have only a partial and fallible understanding of the universe, that we can only rely upon a limited knowledge of this immense and complex reality. Now, in the case of the divine, any religious person should be ready to admit that it is infinitely more complex and remote from our capabilities of understanding than the physical universe. Therefore it should be obvious that every individual, every culture, though having some access to the divine, cannot make the pretension of having completely grasped it and, moreover, of explicitly circumscribing it within the tenets of a single doctrine, however complex and articulate the doctrine might be. This remains true even if one believes that God himself

has spoken to men through a revelation: God can reveal to men only that which men can understand, and this depends on their cultural background. Therefore it is very normal that different cultures have grasped of the divine only certain dimensions or aspects, and have translated this into their religions which, in this sense, appear to be human constructions. It is clear that no arbitrariness or relativism is implied by this statement: also in the case of the sciences we must admit that they are human constructions, though we are conscious that they are not arbitrary, and are confident that their truth-value depends on their telling some truth about the universe. Something similar can be repeated also for religions: they correspond to the effort of men to get in contact with the divine, and they are partially successful in this enterprise, though none of them may pretend to have exhausted all which is accessible to men in this effort.

If things are such as we have proposed, it appears that also in religious matters a mutual understanding is not only possible, but is perhaps the most profitable way of increasing our religious openness. Fanaticism and intolerance have too often marked men's attitude in the field of religion, and this is not only paradoxical, but even scandalous, since the *concrete* effect of religions seems to have been that of making men enemies rather than brothers, and in this sense to have frustrated precisely the chief goal of accepting the divine and living according to its inspiration, this goal being that of leading men to a peaceful and happy existence.

Let us conclude with a remark. What we have been saying does not mean that one has to discard one's culture, to become sceptical about one's principles, values, philosophical conceptions, or religious beliefs, and to remain vacuously 'open' to all possible ideas, influences, or the like. On the contrary, one must necessarily remain rooted in one's culture, must possess one's ideas, deep beliefs, and sincerely accepted values, and this simply because everyone is a concrete and limited being, whose living conditions are ideal and spiritual no less than physical and environmental. But this would not imply being closed towards other perspectives, both in the sense of respecting them, and of trying to derive from their diversity certain elements of personal and collective enrichment.

Models of Sciences: An Attempt at Exploration of Some New Directions of Inquiry*

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I

1. A model of science is a broad framework presented by certain concepts and rules or instructions seeking *systematic methods* for pursuing certain goals. Systematic methods include sources of knowledge adequate for the enterprise, methods of generation, construction or presentation, and appraisal of knowledge, rules of dialectic, norms for correct arguments, schemes for action, etc. Thus, a model presupposes a well-defined conception of goals that are to be achieved; after which it lays down outlines and rules of the method that can best achieve the goals—efficiently and successfully. The method does not guarantee success but ensures a high probabi-

* The main thrust of this essay is to sketch out some central conceptions, such as that of *science, methodology, model,* etc., after a study of the structures of Indian *śāstras.* Greco-European natural science is taken up only for the purpose of comparison and not for the purpose of criticism. The concept of *śāstra* developed in the *ārṣa* or Vedic-Upanisadic trend after the Saṃhitā phase of cognitive pursuit and was accepted subsequently by Baudha and Jaina trends as well. A *śāstra* is a systematised body of knowledge grounded in *pramāṇa* and established by *yukti*; it is an ongoing process of inquiry through criticism and defense. As purpose of knowledge in general was conceived by the *ṛṣis* to aid in the fulfilment of human life and eventual release, specific *śāstras* were pursued centering on some central human purposes. The major *śāstras* that are received are *mokśa śāstra* or *darśana śāstra, śabda śāstra* or *vyākaraṇa, dharma śāstra, artha śāstra, kāma śāstra, jyoti śāstra, āyu śāstra, nāṭya śāstra, śilpa śāstra,* and *vāma tantra. Śāstras* and their *anga vidyās* achieved the acme of knowledge systematization; the concept of systematization underwent considerable change in the *tantras* during the Tantra phase. Methodology of developing the *śāstra* itself was worked out in the *Nyāya sūtra* of Gautama forming part of *mokśa śāstra* which, along with *śabda śāstra,* was considered basic to all other *śāstras.* Each *śāstra* considered it essential to incorporate the methodology of pursuing the concerned goal as also explication of the goal in the main body. Rational principles of practice and theory were thus developed. Therefore a *śāstra* is closest to the conception of *science* as understood contemporaneously. However, no distinction between 'natural' and 'human', or 'pure' and 'applied' science was made nor a distinction made between 'philosophy' and 'science' or 'science' and 'art'. In order to appreciate thoroughly the main contentions of this essay, some knowledge of rational structure of above *śāstras* is indispensable of which representative works are available with translation.

lity of it if adhered to. The search for efficient method *demands* theoretic investigations into the area of pursuit or the field of interest. Moreover, the specific goal—as clearly stated and grasped—also necessitates theoretic investigations.

A model of science is therefore a model of rationality and of proper evidences as well as actions, in the practice and theory of the field of interest.

In order to pursue a specific goal, one must *know* what the goal *means* and one must know by what systematic efficient method it can be sought. A search for meaning of the goal involves one in theoretic investigations. *Theories are therefore meaning-explicating episodes of goal-seeking enterprises* having characteristic methods. Only as a meaning-explicating episode does a given theory explain facts and resolve problems. The validity of the theory, then only partly depends on its *explainability* and *resolvability*, it must in addition *illuminate* about goals and even be *instrumental* in the attainment of goals via the method.

We are saying that in any human endeavour, goal-inquiry comes first. Only in the context of goal do method-inquiry and theory-inquiry make sense. Method-inquiry and theory-inquiry may follow simultaneously from goal-inquiry, or else, theory-inquiry may arise via and after the method-inquiry. Theory-inquiry can never follow directly from goal-inquiry independently of method-inquiry. The entire activity of man—including the pursuit of knowledge, techniques and fine arts—has therefore to be understood in the context of certain sets of purposes. As attempts are made to work out how certain purposes can be sought systematically and efficiently, it invariably calls for basic theoretic investigations in the field of interest.

Since theory arises in the context of goal and method, it requires the working out of a method of generation, presentation or construction, and appraisal (GPA) of the theory itself. Methodology as a science of methods may thus be analysed as two seperate components: methods of best attaining the goal and method of GPA of theories.

A scientific enterprise, then, is strictly *scientific* if and only if it is clear about its goal, method and theory *at the same time.* Without awareness of goal and method, a science would be like a man walking backwards though more or less in the direction of his destination. When a man is moving backwards in the direction of his destination, he has, firstly, a fairly good view of the ground so far covered, and, secondly, he must keep on turning his neck towards the goal in order to ensure that he is moving in the correct direction. He gazes at the likely goal only once in a while. This procedure ensures that sooner or later he would reach the goal though the procedure is not adequate or proper in so far as the question of efficiently reaching the goal is concerned. Indeed his procedure is better than that of the man walking forward towards his goal but having neither an eye on the goal with not a glance backward once in a while of the ground covered so far.

Natural Scientific Methodology or the science of method of modern natural science attempts to systematise human conduct of discovery and appraisal of such discoveries. The methodology does not arise in the context of some goal or goals but rather it endeavours to be a *post-facto* systematisation of the *actual* conduct of discoverers or explorers as recorded in the history of discovery or exploration and demands that systematisation account for the *order* in which discoveries were made and for various influences *external* to the discovery-matrix that were working. Three important features of the conduct of discovery are that: (a) it is *natural* conduct born of the 'discoverer' nature of man, (b) it is conduct without explicit awareness of the goal, and (c) it is conduct with only marginal awareness of method (such as shown by Galileo and Newton). It is clear that inquiry into goals and methods has by and large not been a part of the matrix of discovery.

If, however, the fundamental problem of scientific methodology is thus to uncover the underlying *pattern* in the natural conduct of discovery, the more interesting questions would be: How many *types of discoverers* are there? What are the components of the discovery-matrix on the basis of which its structure can be characterised *completely*? What are the stages by which discovery fructifies or reaches a finale, that is, following an appraisal? What are the components of strategy of discovery? How many types of problems are there? What are the obstacles to discovery and how can these be overcome? How do component sciences arise from any given science during the growth of the latter? If answers to such questions as above are sought from the actual history of scientific discovery, what would result would be a methodology of discovery. We may further ask what goal is precisely being sought and what methods are most likely to ensure efficient pursuit of the goal? This would explicate why the demand for accounting of the particular order in which discoveries were made is an illegitimate demand, unless it is shown that the order in which history of discovery unfolded is a *unique* order and no alternative, more efficient, order is possible. Moreover, clarity about the constituent components of the discovery-matrix would help demarcate what is internal and what is external to it so that the actual history can help classify the external influences in a definite number of classes. Indeed, study of history of conduct of discovery is significant not merely because it would provide us with data for such classification and analyses, but also because it spurs our intuition towards the completion of such classification and analyses. What would thus be achieved will be the principles that govern the natural conduct of discovery seeking the goal with optimal efficiency. Such a

science of method does not aim at *advising* what *ought* to be done for seeking a certain goal but rather what is optimally done by virtue of the underlying natural principles governing the conduct of discovery. Thus, if we try to analyse any specific conduct of discovery of the past (history) or of the present, it may not involve *all* these factors and components of the method but only *some* of these so that the specific conduct can be said to lie *within* the realm of our methodology and cannot falsify it. The specific conduct can falsify the methodology only if some factor or component other than uncovered by us underlies the conduct, necessitating an extension of the methodology itself. And indeed if we can uncover *all* the factors and components that underlie the natural conduct of discovery, then we can be sure that all the specific conducts of the past, present and future can be analysed and understood in terms of it, thus making it universal in space and time.

The aim of methodology is therefore to make explicit the universal principles underlying the practice in the field of interest and although these principles may remain *remote* for those seeking the goals of the field of interest *naturally*, yet these alone can be said to be the *reasons* of the practice under consideration. If on the other hand, the goal-seekers are fully aware of these underlying principles, thus making it systematic, greater efficiency of the goal-seeking would be guaranteed. It is, however, not our endeavour in the present paper to develop such a methodology for modern science.

Taking a different line of reasoning, if goals have characteristic universality—all men can and do seek certain universal goals—then it follows that methods and theories, too, must achieve characteristic universality. By universality, here we mean the discovery of certain underlying features that are true for not *all* but a maximum number of humans with very few exceptions, though the interpretations and relations of such features may change under various conditions. A science may be so presented that *radical* changes in its structure will never be required. Or, a science may be so presented that *all* the changes that are likely to take place from the beginning of its time till its end are broadly laid down in a well-determined way—both for the method component of the science as well as for its theory-component. Thus, the demand for *absolute* universality of goals or of principles constituting methods and theories, may be an unjustified demand because of inbuilt or intrinsic limitations of the human apparatus that provides access to knowledge of the world experienced as such. Historically, such attempts at absolutist stance were made and these have repeatedly failed. For example, the Yoga-Sāṁkhya and Nyāya-Vaiśeṣika natural philosophical sciences agree that an absolute, ultimate goal of the world-play is *vimokśa* where all suffering is absolutely eliminated, but then Baudh natural philosophy *reinterprets* this goal as *nibbāṇa*, and so does Jain natural philosophy reinterpret it as *kaivalya*. For another example, *dharma-śāstra* accepts the intuited principle of primacy

of *dharma* over *artha* and *kāma* as a universal one, true for all humans without exception, but then *kama śāstra* denies the principle accepting *two* exceptions to the rule, namely the ruler and the play-woman (*veśyā*), though these latter classes are themselves governed by some other principles of restricted generality. It is no mean theoretical achievement if we discover a principle that governs *most* of the members of a certain set and further discover some variant principles that govern the exceptional subsets of this set, thus covering the *entire* set under principles that are maximally general or are restrictively general. The *exceptions* as *anomalies* thus spur *theory-growth* not theory-rejection,—and the more significant the exceptions, the more compulsive is their role not only in theory-growth but even in giving birth to new goals and new sciences.

2. Goal-variance implies methodological variance since methods must preserve efficiency for attaining specific goals,—methods must be commensurate with specific goals. Variance of goal-interpretation within a given enterprise also implies theory-variance. Thus, goal-specificity entails both method-specificity and theory-specificity and new goal-interpretations may demand revision of methods and theories.

By goal-variance is meant either a variant interpretation of the goal or arising of a new goal different from, and, in addition to, the goal being pursued (thus arising of a new component science). The former may be called interpretation-variance of the goal and the latter goal-shift or shift-variance of the goal. Interpretation variance of the goal may or may not lead to method variance but if it does (even to a slight degree) it is method-variance due to interpretation variance. Similarly, goal-shift may or may not lead to method-variance, but if it does, it is method-variance due to goal-shift or simply method-shift. It follows that theory-variance *can* occur in four distinct ways: theory-variance due to interpretation variance of the goal, theory-variance due to goal-shift, theory-variance due to method-variance due to interpretation variance, and theory variance due to method-shift. More complex occasions of theory-variance would arise when it occurs due to goal-variance but via the method-variance such as: theory variance due to method variance due to interpretation variance of the goal *and* theory variance due to interpretation variance of the goal etc. This is the picture that emerges about variations within the enterprise or field of interest when these are triggered at the level of goals. But the natural conduct of discovery cannot be said to be governed by any rule that would require all variations to originate from goals as indeed these do not so originate. Thus, quite often, unnoticed facts and problems in the field of interest gradually or suddenly come to notice and emerge as major exceptions or anomalies during the advancement of discovery. These gradually compel not only theory-variance but even method-variance sometimes, leading sometimes to an eventual variant interpretation of the goal or goal-shift (that is, if at all there exists sufficient awareness of the

goal within the enterprise!). Thus, from the direction of facts and problems we *can* have either a new interpretation of the theory or theory-shift, leading to interpretation variance of the method or method-shift, leading to interpretation variance of the goal or goal-shift, the latter giving rise, again, to a new component science if at all there exists sufficient awareness of the goal within the enterprise.

The question is whether the process of variation is an unending process continuing in one form or the other, or, it has some end? The answer seems to be that it is both unending and has end(s) in some sense of the term 'end'. In some enterprises, the goal may be a matter of everyday experience so that what would be required for systematisation would be a satisfactory definition of such a goal, systematisation of the natural conduct for the goal, and theoretic investigations required for goal explication. The conduct of defense and appraisal of theoretical principles may continue for a prolonged period leading eventually to a point of saturation. This would mark an end of the enterprise, a stage of completeness of a high degree, at least until some new definition or new interpretation of the goal emerges again. Even in such enterprises where goal is more or less well-understood, exceptions that emerge on the way to its development may compel defining of new, limited goals, giving rise to a new component enterprise which may continue to develop while its mother enterprise has attained a measure of completeness. Further, if the goals themselves are such that these do not easily lend to clear definition, there will be scope not only for alternative interpretations of the goal but also alternative systematisations of the goal-seeking conduct as well as of underlying theoretic principles. Several competing enterprises pursuing the same or similar goals may thus emerge. Such enterprises are more likely to be endless as also these are more likely to give rise to a greater number of component enterprises. It is also possible that an enterprise with a single well-defined goal necessitates classification of *causes* at different *levels* thus necessitating several complementary methods systematising the conduct at different levels and therefore several complementary theories all knit together in a single enterprise. The complexity of such enterprises arises not by virtue of ambiguity of the goal but rather by virtue of the complexity of the situation itself involving diverse kinds of facts at different levels. This complexity increases as such enterprises fructify into various component enterprises defining component goals or exceptions if these compel the birth of new enterprises.

Clarity at the level of natural philosophy helps a great deal in classification and analysis of goals themselves at various levels thus determining the pursuit of goals spurring the systematisation of relevant methods and theories. This saves mishaps, crises and lost directions in the vast domain of cognitive inquiry as also in the restricted domain of specific field of interest. If, for example, all the substances or *dravyas* that there are, are classified as ninefold (as in Vaiśeṣika), it follows that there will be nine sub-

sciences as components of *dravya*-science. Or, if all the human purposes are classified as fourfold, it follows that there will be four great sciences, of which *all* the diverse sciences will be components. Or, if all the diseases are classified as threefold it follows that there will be three major therapeutic sciences. Thus, although remote, natural philosophical theories are the *hetus* of sciences.

3. *Growth* of an enterprise therefore consists in greater clarity and illumination about goals, greater efficacy of methods, and increased explainability and resolvability of theories (i.e. increased consistency and rigour). *Revolutions* occur when *radical* changes in *methods* are necessitated in the enterprise. Within an enterprise, as has been made clear, method-change may be provoked by theory-change or by variant interpretation of the goal under pursuit,—it is never triggered by a *change* of the goal itself for *within* a given enterprise the goals never change, only their interpretations change. Or theory-change may be triggered by unnoticed facts and problems of the field of interest that are noticed by discovering and inquisitive minds at various moments in the history of goal-seeking or by variant interpretation of the goal itself.

Revolution is not a necessary feature of growth of *all* the enterprises without exception. It is influenced by easy or difficult accessibility of satisfactory definition of the goal under consideration, or, else, by the compulsions arising from noticing of new facts and problems as exceptions to 'laws' or underlying principles discovered so far. When the goal does not lend to satisfactory definition and admits of alternative interpretations, a novel interpretation may compel systematising of radically novel methods as also novel theoretic formulations. When exceptional facts and problems force themselves to the centre of the stage of the enterprise and happen not to compel a component different goal, but a radically different method and perhaps novel theoretic formulations also for the pursuit of the same goal, then too a revolutionary situation arises. A radical method-shift is therefore a necessary condition for the occurrence of revolution in an enterprise. Radical method-shift and radical theory-shift jointly constitute the necessary and sufficient conditions for revolution in an enterprise. That is to say, revolutions during growth of an enterprise occur if and only if radical method-shift and radical theory-shift are compelled either by variant goal interpretation or by arising of exceptional facts and problems during the natural conduct of discovery.

Growth of the enterprise, even by absence of revolutions, may not be immutable and uniform. Enterprises pursuing different goals may admit of *mutations* of methods and theories. The more comprehensive and complex an enterprise is, in respect of its methods and theories, the more will it influence as a *model* the other enterprises pursuing different goals and engaged in different fields of interest. Moreover, the methodological and theoretical concepts of one enterprise may be accepted as such or

modified according to requirements of the other enterprise. The enterprises are thus enriched and strengthened as these grow by such mutational activity. Though different enterprises remain fairly demarcated by virtue of their distinct goals and the communities of discoverer-seekers more or less remain confined to their fields of interest, yet this mutational activity of enterprises ensures a fairly impressive exchange across the boundaries generally giving healthy impetus to growth in general.

Does the conduct of the discoverer-seekers also undergo any variation during the growth of the enterprise,—in particular on occasions of occurrence of a revolution? It seems, the conduct does not change in essentials for the governing principles underlying the method of pursuing the goal in general and of generation, presentation and appraisal of the principles in particular are also the defining characteristics of human rationality and therefore necessary and universal,—at least in so far as the community of discoverer-seekers is concerned. The conduct, however, becomes more intensified, attended by danger of transgression of rationality itself and implying a great responsibility for the mature set of leaders within the enterprise. The increased intensity may also be attended by increased frequency of appraisal events, that is, of criticism and defense. This happens because more fundamental issues arise having consequences for a possible bifurcation of the community of discoverer-seekers. Thus, for example, there may be disagreement whether a method-shift is at all called for. If the method-shift is triggered by goal interpretation variance, there may be disagreement about the new interpretation itself. If the method-shift is triggered by a fact-problem complex, there may be disagreement, firstly, about the genuineness of fact or problem or both, and secondly, about the success or failure of their explanation/resolution. Thus, there may also be disagreement whether a theory-shift is needed at all. Further, there may be disagreement whether the exceptional fact/problem requires a new component science or can be tackled only by method/theory-shift. The chances generally are that the community will eventually be bifurcated giving rise to new discoverer-seekers pursuing the goal under variant interpretation or pursuing a component science with a limited well-defined goal. Whatever the case, revolutions during growth of an enterprise are healthy calamities that put the enterprise to test in respect of its rational power to withstand challenges or leading to fruition of novel methods, theories or component sciences. Rarely *is* rationality transgressed in such times of crisis and if the transgression does take place, it would symbolise the beginning of the death of the culture as a whole under whose fold and envelope various goals are pursued, various enterprises grow and flourish and mutate. Persistent transgressions of rationality may proliferate and mark not the end of enterprise but its decay, not the decay of one enterprise but of all the enterprises eventually, pursued by the over-arching culture. If, on the other hand norms of rationality are never transgressed by and large by the culture, it withstands

all internal as well as external crises, whether arising from cognitive domain or from other domains.

II

4. Contemporary 'sciences' of Greco-European origin by and large ignore the inquiry of goals specific to the sciences; these therefore fail to make systematic inquiry into the specific methods adequate for specific goals. The specific theory thus does not arise in the context of specific goal and specific method. The theory is thus not *presented* such as to reflect some clarity about specific goal and specific method; theory is rather a hindsight explanatory episode of the ground covered so far or problems solved so far by the man walking backwards. Therefore, any theory, howsoever sophisticated, presented as it is in fact presented within the enterprise, would ensure theory-change at some moment in the future by virtue of its own *internal logic of generation and presentation. The enterprise then cannot prevent theory-change even if it so desired.*

What is so obvious in Greek thought but what is repeatedly missed by the European men of science, Galileo onwards, is the significance of *method* and *goal* as a necessary component of the enterprise that is science. The greatest contribution of Greco-European culture is the discovery and development of axiom-definition-postulate-theorem (ADPT) model of geometry and the ensuing development of the sciences. The Posterior Analytics (PA) model of Aristotle is only an enlargement of the ADPT model. The goal is implicit in the ADPT model itself, namely, search for common notions specific to each science. The method of geometry in its developmental aspect is the search for new geometrical problems and their proofs. The ADPT themselves constitute the theory. The experiment as a *new* method in geometry is incorporated quite late—by Archimedes—and became central for sciences, Galileo onwards. Gradually, *theorising itself becomes the goal* and geometry in particular and mathematics in general become one device and experiment another device for theorising in diverse fields of interest. We may, however, ask if theorising itself can ever be a goal? It is sometimes said that the praxis of theorising is for discovery of the *truth* or 'secrets of nature'. However, the question generally never raised *within* the enterprise is about the method most adequate for 'discovery of the secrets of Nature'? We may ask, for instance, how is science of mechanics generated, presented and appraised first by Archimedes, then by Galileo, then by Newton, and then by Hertz? How is, then, theory change compelled within the enterprise? How is the science of quantum mechanics then GPA[d] first by Planck, then Bohr, and then Schrödinger, Heisenberg and Max Born? How celestial mechanics grew as relativistic mechanics of special and general varieties? Similar queries may be raised about the sciences of biology and psychology.

The mechanics of Archimedes sought to understand the mechanism or

working principles of simple machines (designed by human ingenuity without any knowledge of such principles) such as lever, pulley, balance, etc. The machines are *translated* into ideal geometrical structures so that mechanics as a theory is generated within the ADPT model. The role of experiment or *organikos* is merely to suggest proper geometrical translation of the problem. Galileo, however, initiated a radical break from this model: mechanical theory was concerned with discovery of '*material*' causes of 'active' mechanisms and their *formal* presentation. The role of experiment is to help discover the underlying causes of movement and geometry is merely a device for formal and well-*proved* presentations. Mechanics thus became an independent science with no definite model of its own—except that it may be roughly called a 'causal-model'—which understands motion in *concrete* situations such as of a ball rolling on an inclined plane or oscillations of a clock pendulum. With Newton, the science of mechanics takes a more ambitious posture: study of all earthly and heavenly motions of things by discovery of their causes and formal presentation of these causes by means of geometry and arithmetics as well as algebra (which developed by the time of Newton), definition and proof remaining the central features of this presentation-method. Experiment is a device not only for discovery but also for *appraisal* of *theorems* or proved conclusions. Methodological 'rules' of discovery also form a part of the science as if the rules are promulgations of some authority in the kingdom of mechanics-science. The only justification of these rules is the 'common notion' of uniformity of nature in space and time.

With Hertz, the method of presentation takes a novel turn. Not only does he show remarkable method awareness, but that of goal awareness too. Particularly, his guidelines for presentation method of mechanics are of lasting significance. He thought the goal of mechanics-science is to 'draw inferences as to the future from the past' and argued that in the construction of the science, 'kinetics' be separated from 'kinematics' (KK-model) so that mechanics forms 'images or symbols of external objects' with the condition that 'the necessary consequents of images in thought are *always* the images of the necessary consequents in nature of the things pictured.' He, therefore, first constructed a formal structure of point masses displaced in space and time free of any empirical constraints, though constrained by requirements of certain area of sense-experience namely things mobile; and then imposed quantitative restrictions on it by introducing empirical principles for the study of actual motions of things experienced. He further gives criteria that make such construction most adequate.

After Hertz, mechanics-science itself bifurcates into two subsciences (with, perhaps the same goal): the mechanics of atomic nature and the mechanics of celestial nature. In both, problems one by one force themselves on the stage eventually compelling formulation of exceptional principles in both sciences. Methodological questions for the first time

force themselves in the enterprise and are both debated eventually forcing method-shift. This led to a conclusive theory-shift. It is indeed a revolution within the history of the enterprise for method was never considered so important and having so decisive an influence on the GPA of theory itself. This specific crisis situation is interpreted as a necessary feature of science though it is difficult to say whether it arose due to lack of methodological awareness of natural scientists or due to the very nature of the enterprise. The question of goals has yet not become significant and nobody knows whether a 'goal-shift' has occurred with the bifurcation of the two sciences or both are pursuing the same goal 'implicitly'.

Truth, goodness, beauty, justice, power and health are some of the central goals of man as conceived in Greco-European thought. Thus, each of these goals necessitates a science, namely truth-science, goodness-science, beauty-science etc. It is evident that all the specific sciences of Greco-European origin need a new classification under the above general sciences. It is generally agreed that truth can be sought by the path of *knowledge*, goodness by the path of *moral conduct*, beauty by the path of *emotions*, and justice and power by the path of *legislative enforcement*. Health may be incorporated in goodness itself since it is pursued by specific *moral conduct* only. Not that these goals are *natural* goals of all humans, but these are rather values or ideals which become possible by rising above natural propensities and by practice of cultivation such that these become the habits. Only by such cultivation can we become truly *human* rising above the animal nature. It is also added sometimes that by thus becoming more and more human, we earn the love of God.

Since attainment of genuine humanness is by itself a convincing goal, we may say that development of sciences with respect to the above division of goals will itself promote the universal goal. The truth-science would thus be a knowledge-centered systematisation considering not only the nature of knowledge, methods of its generation, appraisal and presentation but also systematisation of knowledge seeking conduct as well so as to make explicit the optimum ways and means of knowledge—of oneself, of secrets of nature, of one's relation to the world, of purposes and meanings of life, etc. The goodness-science would similarly be moral-conduct-centered systematisation presenting principles determining proper conduct whose fruition is good. The beauty-science would seek to uncover the principles that determine the inner experience of emotional joy upon sense-experience of beautiful objects,—thus being emotional experience-centered. The justice-power-science would be legislative enforcement-centered determining the principles that would mark a just social order where power is justly deployed. All the diverse sciences—natural or human—can thus be classified as component sciences of these four general scientific enterprises.

5. A central contribution of Indian culture is the discovery and development of *kāraṇa-kārya-prayojan* (KKP)-model and the ensuing development of various sciences. A model of presentation of science itself, parallel to the Greek ADPT-model, is the *Uddeśa-Lakśaṇa-Parīkśā* (ULP)-model as explicated in the presentation of Nyāya-science and *Sangrah-Nirukta-Kārikā* (SNK)-model as explicated in the explication of Vyākarana.

KKP-model considers *all* sciences as *practical* sciences. The sub-sciences or *anga-vidyās* have meaning only as part of a science. Thus, for example, *jyoti-vidyā* is only an *anga-vidyā* of Yoga-Sāṃkhya or Nyāya-Vaiśeṣika sciences, and *gaṇit-vidyā* only an *anga-vidyā* of *jyoti-vidyā* itself. Moreover, some specific *science alone is the hetu (kāraṇa) of specific human practice or conduct* which needs to be discovered. The discovery is that of underlying theory and method.

The KKP-model is well explicated in the *āyu*-science as practised in India today. The science proceeds by the goal of healthy and complete life-span (rationally 100 years). Therefore, it proceeds to first lay down the *method* of preventive conduct. Then it investigates the causes of disease occurrence and develops a causal theory of disease called *doṣa*-theory. Then it investigates the *method* of remedying the diseases. This leads to the development of *dhātu*-theory and *rasa*-theory and further discovery of *dhātu* as another conditional cause of disease. The theory then establishes relation between *doṣa, rasa* and *dhātu.** Finally it develops a *rasāyan*-theory for promotive conduct.

Take another example of *nātya*-science as practised in India today, which has a different goal to pursue than the *āyu*-science. It also proceeds by explicating its goal of *kām* and entertainment (*vinod*) and representation of great deeds. Subsequently are developed the *nātya-rasa*-theory and *bhāva*-theory. Methodology of sources of knowledge employed and of appraisal of the theories are then taken up. The *abhinay*-theory and *gandharva*-theory are then developed and relationship of acts of *abhinay* and *swaras* (or acts of musical speech) of *gandharva* with *rasas* and *bhavas* is shown.

Most of the received Indian sciences, being practical, seem to adopt the KKP-model as a methodological model. Thus, in the *āyu*-science, *ārogya* is the *prayojan*, therapeutic treatment by *rasas* is the *kārya*, and *dhātu-doṣa-rasa*-theory is the *kāraṇa*. In Yoga-science, *kaivalya* or *dukha-nivṛtti* or *puruṣa jñān* or *pṛkṛti jñān* is the goal, practice of *yogāngas* and *vṛtti-nirodha* is the *kārya* and *puruṣa-prkrti-triguṇa-kleṣa-vrtti*-theory (or Saṁkhya theory) is the *kāraṇa*. In the *nyāy*-science *apavarg* or *mithyā-jñān-nivrtti* is the goal, *vād* and *vigrah* or dialectical practice is the *kārya*, and *ṣada-padārth*-theory (Vaiśeṣika theory) is the *kāraṇa*. In *śabda*-science (or Vyākarana), *dharm sanchay* is the goal, linguistic conduct bound by grammatical rules is the *kārya* and *śabda-varṇa-pad-vākya*-theory is the *kāraṇa*. In the *artha*-science, *artha* is the goal, seeking of *artha* systematically is the *kārya*, and *pṛkṛtimaṇḍal*-theory, *ṣāḍguṇya*-theory

* Methodology of sources of knowledge employed, of appraisal of theory of diagnosis, of cure, etc. is developed.

upāya-theory, *abhiyāsya*-theory, etc. are the *kāraṇa*. (The last chapter of Kautalya's *Arthaśāstra* takes care to give a model for method of presentation of *artha*-science). In the *kāma*-science, *kāma* is the goal, effective *kāma*-conduct characterised by inner experience of joy is the *kārya*, and *rata*-theory is the *kāraṇa*. In the *jyoti*-science temporal predictions and post-dictions or *kāla jñāna* is the goal, harmonisation of conduct with time-unfoldings is the *kārya*, and *nakśatra-gati, tārā-graha-gati, rāśi*, and *phaloday* theories are the *kāraṇa*.

The KKP-model indicates a definite conception of scientific enterprises or systematised knowledge in certain areas or fields of human life as it is lived. It is not the business of any science to *advise* humans what they *ought* to do. Rather the science in question studies the area of human conduct under consideration and discovers the meanings of the purposes or goals being sought, the underlying principles governing the conduct in the area so as to formulate a systematic methodology providing the most efficient method of praxis, and finally makes explicit the universal theoretical principles underlying the conduct and the goals making these accessible to all humans without exception. The latter principles are said to be rational or *yukti*-based so that the conduct is repeatable and inter-subjective.

The ULP-model as a model of presentation of science also conceives of science as an *appraisable* and *systematisable* enterprise. Thus, *uddeśa* concerns presentation of main conclusions right at the outset, *lakśaṇa* concerns defining of major concepts and principles, and *parīkśā* concerns systematic appraisal of the concepts and principles according to rationally acceptable norms/criteria/rules. The SNK-model is perhaps an earlier formulation in history of a model of presentation which was replaced by the ULP-model gradually. Thus *sangrah* concerns summary presentation of main concepts/categories of the science, *Nirukta* concerns analysis and classification of these general concepts/categories, and *Kārikā* concerns detailed explication with reason or *hetus* of analyses and classes. The rationale behind these models of presentation is that a systematised body of knowledge must itself be presented systematically thus making it more amenable to appraisal/criticism.

Man thus being conceived as a goal-seeking entity by *nature*, the *purpose* of general rational activity itself is to make explicit the underlying principles that universally determine the conduct allowing formulation of *natural* methodology and therefore optimally efficient goal-seeking. The systematiser achieves this purpose by first making explicit the principles of knowledge-systematisation itself such as propriety of *pramāṇas*, of criteria of criticism and defense, of fallacious reasoning, of objects constituting the area of investigation, etc.

6. When the KKP-model is applied to the scientific enterprises of Greco-European origin, these may be interpreted as follows: In the truth-science,

truth is the goal, experimental-mathematical techniques or methods are the *kārya* or practice, and the theories of pure sciences are the cause or *kāraṇa*. In the goodness-science, good is the goal, rule governed conduct is the *kārya* and ethical moral theories are the cause, and so on.

Considering the truth-science, we may ask whether the goal of truth can be attained by experimental-mathematical practice alone? Further, whether the same method will be adequate for GPA of pure scientific theories, or a method-shift within the enterprise is indispensable? More explicitly, can the same sources or means of knowledge generate knowledge in mathematics as well as in astronomy and cosmology in the same order of significance? For example, we generally admit sense-perception and ratiocination as two unconditional means of knowledge whereas intuition is accepted on the condition that it leads to coherent ratiocinative conclusions. Natural scientists generally rely most on direct or indirect sense-perception (being a touchstone of truth), little less than that on ratiocination and the least on intuition. Can this same policy work for biology and psychology? It is clear that methodological considerations are of primary significance for the enterprise as a whole. Similarly, clarity about goal is indispensable. For example, what are the entities—to be *classified* exhaustively—about which the discoverers seek to know the truth? There are broadly, the numbers, the atomic nature, the celestial nature, and human nature, and the nature of lower-than-human forms of life. Of these, human nature is most complex and it is generally questioned whether it is *entirely* governed by *natural* principles and if so, in what manner? Such and other issues have to be tackled at the *theoretical* level in the context of the goal itself.

Considering the justice-power-science, just social-political order is the goal; method or praxis of legislative enforcements and deployment of power are the *kārya;* and social, political and legal theories are the cause of the natural social-political-legal conduct of man. Considering the goal, when we ask what is meant by a just social-political-legal order, variant interpretations emerge and thus at the very outset several alternative justice-power-sciences emerge under variant goal interpretations. Thus the goal pursued is presumably the *same* for all humans, only its interpretations vary from group to group. (Such variant interpretations are the nuclei of cultures on which these cultures grow,—amongst several other nuclei.) If we now ask what methods of legislative enforcement and power deployment can attain the goal with optimal efficiency, it is evident that variant methods will be suggested in accordance with interpretation variance of the goal. The two will lead to variant formulations of theories. In this way several alternative justice-power-sciences will come into existence, will be pursued by different groups and adopted as rational grounds for social-political-legal conduct. Must only *one* of these sciences lead to *the* just social-political order, or can all of these alternative sciences lead to, more or less, equally just alternative social-political-legal orders? The latter

situation is quite conceivable and the issue cannot be settled till an ideally just or a maximally just order is attained where the superiority or greater rationality of one kind of science over others can be demonstrated. Or else, within a given society, alternative groups may pursue alternative sciences and grow by interaction and exchange, evolving eventually into a synthetic just order.

7. Some prominent contemporary *methodological* models are those of Popper, Kuhn and Lakatos and the more recent ones such as by Pandit. The limitation of these methodological models is their being concerned *only* with the uncovering of underlying principles of actual praxis of modern natural science. They are generally unaware of the goals that explicitly or implicitly influence the praxis and generally do not ask any questions about the models of presentation adopted by these various sciences which not only change with time for a specific science but also vary from science to science. They generally talk about *natural* science excluding psychology from it and by and large think of it as an essentially endless enterprise as nature, that is sought to be *known* in this science, is itself infinite. Their conception of the science of methodology is itself inadequate for according to them methodology is concerned with what the natural scientists have been doing Galileo onwards. Thus, they seek to discover the underlying principles that systematise the actual conduct of discovery of this specific group of natural scientists hoping these to be the universal principles systematising the conduct of discovery of *all* discoverers by and large. If, however, Methodology is concerned with the discovery of systematising principles of optimally efficient goal-seeking conduct, then methods may vary from goal to goal, and thus from science to science.

Some of these thinkers insist that methodology provides criteria for demarcation of genuine science from pseudo-science and that induction as a method of systematisation be excluded from rational methodology since it is paradoxical at the roots. Others insist that irrational factors *actually* influence the conduct of discovery during the periods of crisis when a 'paradigm-shift' occurs. Yet others require that all methodologies satisfy the appraisal-test of rational reconstruction of actual history in the order in which it has unfolded during the conduct of discovery of these natural scientists—Galileo onwards. Finally, others develop an interaction model of methodology taking *theories* and *problems* as chief developmental-epistemic structures of the scientific enterprise so that it grows both by *explaining backwards* from problems to theories and *resolving forewords* from theories to problems.

We may, however, ask if the natural scientists as discoverers (and theorisers) are pursuing some goal(s) and if so who will explicate the meaning(s) of such goal(s) for them? Further, if indeed they are pursuing some goal(s) what can be the optimally efficient method of attaining the goal(s) and who will satisfactorily settle this issue? Clearly, it is the

discoverers themselves who have to become clear about these issues. If so, then in a given enterprise of science, proper theory and relevant problems cannot arise in the absence of the goal-context and method-context. Indeed it is the specific methodology and specific goal that are central to a specific science and not its theory and problems. If the discoverers in a given scientific enterprise are somewhat clear about the goal and method of the enterprise then most of the problems arising in the methodological models of the above thinkers can be tackled more or less satisfactorily, for the growth of the enterprise would not consist merely in the growth of theory by birth/resolution/explanation of problems and facts but also in the variance of method and goal as already indicated. Thus, the author's earlier analysis of GPA of science, in terms of necessary and sufficient conditions of adequacy of object of discovery, competence of the discoverer, and adequacy of techniques of theorisation, is itself inadequate in so far as it disregards the significance of the goal.

In so far as the requirement of demarcation is concerned, indeed it is the business of methodology to make explicit the epistemic structure of any science: chiefly the sources of generation of knowledge, methods of its systematisation and rules and principles of its appraisal. It can also be told under what conditions a theory within the science will be considered as falsified: for example in the *artha*-science, *ṣāḍaguṇya*-theory will be considered falsified if any state employs means other than *sandhi, vigrah, āsana, yāna, sanśraya* and *dvaidibhāva* taken singly or any combination thereof. The requirement of *prediction* of future events on the basis of past observations may be applied only to certain sciences and not to all sciences. Thus the only legitimate criteria for any science to be science proper could be that its sources of knowledge generation be legitimate, its methods of systematisation be valid employing criteria of proof and its rules and principles of appraisal be rational and non-fallacious. A science may employ inductive generalisation with qualification such as 'unless exceptions are noticed' without making claims for its universal and necessary truth and it will be a perfectly *rational* procedure. In any natural conduct of appraisal, it will be natural if 'irrational' factors play some role,—only if such factors are classified and marked as rationally undesirable just like logical fallacies, these can become grounds for rejection of any specific conduct of appraisal itself. As already indicated, the demand of rational reconstructability of internal history of science from its methodology is illegitimate for in any given science the conduct of discovery may attain the goal in several different ways without falsifying the rules and principles discovered by its methodology. Finally, no theory/problem-centered methodology can be a proper methodology for any science, for in it goal(s) plays a fundamental role as also methodology itself shapes the theory and identifies facts and problems of the field. Further, the growth of a scientific enterprise is not merely theory-growth (whether by explanation or by resolution or both) but it is also often

method-growth/variance and goal-shift triggered sometimes from one end of problems/facts and sometimes at the other end of goal interpretation variance/shift.

Since characteristic goals and methods give a fairly well-defined cognitive-epistemic-systemic structure to a scientific enterprise, a given scientific enterprise may always be considered external to any other scientific enterprise and the enterprise called 'philosophy' is no exception to it provided it satisfies the general criteria of systematisation as indicated above. However, such externality to other scientific enterprise does not make a given enterprise a self-enclosed growing system but it may generally exchange concepts, principles and rules from other scientific enterprise, howsoever remote in its goals.

8. The above considerations indicate that one may conceive philosophy as a grand enterprise involving investigations in a variety of goals, variety of methods and a variety of theories in their relations, interactions, mutations, etc. It consists of three components, namely, grand axiology, grand methodology, and grand theory. Thus, for example, grand axiology involves conceptions of *bhoga* and *apavarg* as goals or *dṛṣṭa prayojan* and *adṛṣṭa prayojan* as goals or *kaivalya* as goal or *nibbāṇa* as goal or *dharma, artha* and *kāma* as goals, etc. The meanings of these goals become explicit, firstly, by the methods of seeking these goals such as the well-known '*yoga*'—method or the '*nyāya*'-method or the *aṣṭa-marg* or the *panch-vṛta*; and secondly by the theories such as that of *puruṣa* and *pṛkṛti pariṇām* or *ṣaḍa padārth* or *citta* and *bhūta* or *jīva* and *ajīva*, each involving principles of causation (*kāraṇa*) and validation (*pramāṇa*) as necessary presuppositions. The grand enterprise that is philosophy investigates not only *all* the varieties of goals and methods and theories but also makes explicit the major differences between them and allows a rational contest between adherents, if any, of these differing varieties. Philosophy is essentially an enterprise of pursuit of a certain well-defined goal by a systematic method contesting at the same time *rationally* in appraisal and criticism of alternatively interpreted goals and methods, and defense of one's own goal and method. In this way, various theories of sciences constitute the grand theory; and scientific methodology becomes only a special branch of grand methodology catering to specific fields of interest. What is essentially demanded of philosophy is comprehension of essential meanings of *all* the diverse goals of mankind and therefore the apprehension of concerned methods and theories, not a limited preoccupation with natural sciences alone (including perhaps mathematico-logical science). Philosophy is thus the distilled essence of a whole culture, it represents the rationality of a whole culture in which societies pursue diverse goals employing diverse methods and theories, where mutations *between* different fields of interest take place and revolutions *within* these occur.

Life, Will and the World: Some Reflections on the *Notebooks* 1914–1916

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Wittgenstein's *Notebooks*[1] 1914–1916 contain significant remarks on the nature of Life, Will and the World. These need a thorough study in view of their importance in the understanding not only of *Tractatus Logico-Philosophicus*[2] but also of Wittgenstein's later philosophy. This essay is an attempt at integrating these metaphysical issues into Wittgenstein's early philosophy in general and also to suggest that some of the later Wittgensteinian concepts could easily be traced to these issues. In sections I to III, I will focus on Wittgenstein's metaphysics of Will and the World, and in section IV, I will hint at the underlying significance of this metaphysics in Wittgenstein's later philosophy.

I. METAPHYSICS OF LIFE AND WILL

The *Notebooks* are, like the *Tractatus*, a text on logic and language. They contain Wittgenstein's earliest investigations into the nature of logic and the relations of language and the world. But that is only one aspect of his total philosophical quest which also investigates the *limits* of language and all that language cannot express, or can, at best, show. The deep significance of the inexpressible or of that which can be shown is the underlying theme of some of the remarks in the *Notebooks*. The metaphysics of Life and Will is the unquestionably inexpressible theme of great importance which Wittgenstein struggles hard to articulate in these remarks. The following is a significant entry in the *Notebooks*, dated 11.6.16:

> What do I know about God and the purpose of life?
> I know that this world exists.
> That I am placed in it like my eye in its visual field.
> That something about it is problematic, which we call its meaning.
> That this meaning does not lie in it but outside it.
> That life is the world.
> That my will penetrates the world.
> That my will is good or evil.
> Therefore that good and evil are somehow connected with the

meaning of the world.
The meaning of life, i.e. the meaning of the world, we can call God.
And connect with this the comparison of God to father.
To pray is to think about the meaning of life.
I cannot bend the happenings of the world by my will;
I am completely powerless.
I can only make myself independent of the world—and so in a certain sense master it—by renouncing any influence on happenings (p. 73).

These remarks contain almost everything important that Wittgenstein has to say in the *Notebooks* and the *Tractatus* on Life, Will and the World—a theme very close to Wittgenstein's heart. They throw light on the most important aspects of his early writings considered from the ethical and mystical point of view that so remarkably makes itself manifest in these writings.[3]

There are two broad categories under which Wittgenstein's metaphysics of Life and Will can be considered: One, the logical requirement of this metaphysics, that is, the logical framework in which it is or can be situated; second, the ethical and mystical imperatives underlying the metaphysics of Life and Will. The second one is Wittgenstein's deeply perceived need for breaking the bounds of the conventional sense embodied in language for the sake of the inexpressible or the mystical. The real need is the need of going beyond the limits of logic and language. This urge for the mystical is the source of all that is great and noble in the philosophical endeavour. Wittgenstein puts it in the following passage:

> That is to say: I see now that these nonsensical expressions were not nonsensical because I had not yet found the correct expressions, but that their nonsensicality was their very essence. For all I wanted to do with them was just *to go beyond* the world and that is to say beyond significant language. My whole tendency and I believe the tendency of all men who ever tried to write or talk ethics or religion was to run against the boundaries of language.[4]

For Wittgenstein, however, logic and ethics are not divorced from each other. Therefore, the problems of the mystical, that is of what cannot be said, lie within the heart of logic. Logic alone tells us what must lie outside the boundary of language. For Wittgenstein, the metaphysics of the Will is an extension of logic in so far as Will is the transcendental presupposition of logic. Logic in this sense presupposes that the Will belongs to the realm of the noumenon, i.e. the realm of the unsayable. The realm of logic is the realm of the Idea or, to put it in Schopenhauer's terminology, logic deals with the World-as-Idea.[5] The World-as-Will is beyond logic's comprehension and so must be left out of the logical considerations. Logic's World-as-Idea is bound up with the necessary logical laws which give it an order and form,

and so there is a metaphysically recognizable logical determinism throughout the phenomenal world. Wittgenstein characterizes logic in the following way in the *Tractatus* (6.13):

> Logic is not a body of doctrine, but a mirror-image of the world.
>
> Logic is transcendental.

What logic can reveal about the world is its *a priori* order or the transcendentally presupposed laws of logic that lend the necessary unity of structure to the world of facts (cf. *NB*, p. 53). What logic, however, does not or cannot say is that the world exists (cf. 5.552, 5.5521) and that it is a deeply contingent world in that it is an accident that such a world exists. 'Aesthetically, the miracle is that the world exists. That there is what there is' (*NB*, p. 86).

The world-as-miracle is itself a noumenal reality since the metaphysical contingency attributable to the world is unsayable. It is outside the boundary of logic and language. It is *mystical* that the world exists. 'It is not *how* things are in the world that is mystical, but *that* it exists' (6.44). Metaphysically speaking, the world is 'all that is the case' (1) and so is 'the totality of facts' (1.1). In this world 'everything is as it is, and everything happens as it does happen. . . . For all that happens and is the case is accidental' (6.41).[6] Since the world is contingent in the ultimate sense, it is philosophically imperative that it is transcended through a search for the non-accidental which cannot lie in the world itself. The non-accidental is Value (6.41), or God (6.432) or the Will which is 'the subject of ethical attributes' (6.423). The world as the accidental existence is neither willed by a Higher Being, since 'the world is a matter of complete indifference for what is higher' (6.432) nor is it controlled by a thinking subject such that the world would be *a priori* determined by the laws emanating from this subject.[7] A thinking subject is that which 'thinks and entertains ideas' (5.631) and such a subject does not exist as the centre of the representations of the world. So the World-as-Idea is without a centre and a cosmic owner. If the book *The World as I Found It* could be written, then, as Wittgenstein says, it would 'include a report on my body, and should have to say which parts were subordinate to my will and which were not, etc., this being a method of isolating the subject or rather of showing that in an important sense there is no subject; for it alone could *not* be mentioned in that book' (5.631). Thus the world is without a metaphysical subject *within* it (5.633) and so remains a cosmic accidentality.

However, the disappearance of the thinking subject makes room for a willing subject or the metaphysical subject *outside* the world, that is, as a limit of the world (5.641). The world still has a centre, but in the ethical sense of there being the seat of good and bad. The world as a whole has a sense or value and that originates in the willing subject. Wittgenstein writes in the *Notebooks:*

> The thinking subject is surely mere illusion.
> But the willing subject exists.
>
> If the Will did not exist, neither would there be that centre of the world which we call the I, and which is the bearer of ethics.
>
> What is good and evil is essentially the I, not the world.
> The I, the I is what is deeply mysterious (p. 80).

The mysterious I is the transcendental I that represents the supremacy of the Will and its ethical action. That is to say, ethical life and action demand a willing subject or a moral agent who cannot belong to the contingent world. The contingency of the world directly presupposes a non-contingent source of ethical will and motivation. Wittgenstein thus makes room for a transcendental World-as-Will in order to show that such a world is a non-contingent world of ethical values and meaning of life. That transcendental world is the moral world. Thus 'it is clear that ethics cannot be put into words. Ethics is transcendental' (6.421).

Wittgenstein revises the Schopenhauerian[8] distinction between Idea and Will by making the willing subject a limit-subject and divesting it of agential power. Schopenhauer's Will is the potent source of action and energy, but Wittgenstein's Will is passive, spectatorial and ultimately resigns itself to powerlessness. The Will's capacity for initiating action and change is denied for the reason that action as distinguished from the Will is contingent. Action as an event is contingent but action as willed is not contingent. Action is dependent on time but the Will is not so dependent. Will is timeless as the basis of the ethical motivation of doing good or bad. Will is indifferent to time.[9]

II. MY WILL AND THE WORLD-WILL

Wittgenstein faces the problem of relating the Will to the world for more than one reason. First, the Will is ethically significant as the centre of the transcendental point of view. It affects the world as a whole—'a limited whole' (6.45). The world as the totality of *facts* however, is not affected. As Wittgenstein puts it, 'if the good or bad exercise of the Will does alter the world, it can alter only the limits of the world, not the facts—not what can be expressed by means of language' (6.43). Secondly, 'my' Will, that is, the Will that expresses itself in 'my' life is the same as the World-Will. Wittgenstein believes that the Will manifesting in me is the same as the Will manifesting in the snake, lion and the wasp (cf. *NB*, p. 85). It is the common spirit found in the lifeless objects too (p. 85). This is due to the fact that the world is pervaded by Will as much as the former is given to me in my consciousness. 'The world is *given* me, i.e. my Will enters into the world completely from the outside as into something that is already there' (*NB*, p. 74). This may appear to be a subjective reason why my Will is non-

different from the World-Will. But Wittgenstein's intention is clear: the World-Will is the other aspect of 'my Will'. There is only one Will from the transcendental point of view. It can be called the human Will as much as the Will of the wasp. My body and the body of the wasp are on the same level since they manifest the same Will. Wittgenstein writes:

> And in this sense I can speak of a Will that is common to the whole world. But this Will is in a higher sense *my* Will as my Idea is the world, in the same way my Will is the World-Will (*NB*, p. 85).

The common Will is the vital link between the 'I' and the world. The 'I' is the ethical image of the world and it is the personification of the Will. Will is not the psychological entity that is found amongst the mental phenomena. In that sense Will transcends all psychological limitations and is the same as the World-Will that affects the world ethically through its constant moral pressure on the latter. Thus Wittgenstein's Will, unlike Schopenhauer's, is a divine Will that explains how and why a powerless Will is so ethically significant.

Wittgenstein construes Will as Life, i.e. the living image of the willing subject that initiates moral actions. Will without Life cannot be divine because it will lack the aspiration for the higher. Life is the movement for the higher. But this movement involves no time; it is an eternal activity of being one with the world. In that sense Will and Life are one and must become non-different from the world. Wittgenstein writes,

> The World and Life are one.
> Physiological life is of course not 'Life', And neither is psychological life. Life is the world (*NB*, p. 77).

The metaphysical Life is the transcendental and timeless reality of being alongside the world. But bonds of the eternal Life with the world are more than a plain dualism. A monism of the Will-World and Life-World develops as the ultimate transcendental thesis. This is not what could be put into words, or, for that matter, could be proved. It can be shown since it is deeply mystical.

The primary contention is that 'my Will' and 'my world' are one. That entails that 'my Life' and 'my world' are identical. This sense of 'my world' is solipsistic because there is the tendency to look upon the world as identical with oneself. Wittgenstein realizes the force of the solipsistic tendency when he writes,

> *The limits of my language* mean the limits of my world. There really is only one world soul which I, for preference, call *my* soul and as which I alone conceive what I call the soul of the others. The above remarks gives the key for deciding the way in which solipsism is a truth (*NB*, p. 45).

Wittgenstein's solipsism is based on the principle that 'the world is *my* world' (5.62) and this is 'manifest in the fact that the limits of *language* (of that language which I alone understand) mean the limits of *my* world' (5.62). Two points emerge here: first, the notion of 'my world' is logically forced on us, since the language I use is 'my language' that limits 'my world'; secondly, 'my Life' is identical with 'my world' which follows metaphysically from the fact that I and the world are one (5.621). Thus the truth of solipsism is the truth of our being a unique subject or self alongside a unique world. As Wittgenstein puts it, 'there are two godheads: the world, and my independent "I"' (*NB*, p. 74). These two eternal realities vie with each other for supremacy in both realism and idealism. For realism the world is supreme whereas idealism takes the self as supreme. Solipsism is a compromise; it takes the self and the world as one, that is, as non-different in that the self as Will is also the World-Will. The duality of the Will and world is transformed into the unity of the World-Will that marks the end of the intellectual understanding. This in a way dissolves the Schopenhauerian Idea-Will duality and brings about the identity of the ethical Will and the ethically willed world. The willed world is the same as the World-Will.

III. LIMITS OF SOLIPSISM

Now the question arises, is solipsism finally different from realism, or is it a new discovery of truth that realism did not uncover? Wittgenstein's answer is 'No'. Solipsism, though true, is finally self-effacing. It denies itself and thereby puts everything, i.e. self, world, Will and Life as they really are. Wittgenstein writes,

> This is the way I have travelled: Idealism singles men out from the world as unique, solipsism singles me alone out, and at last I see that I too belong with the rest of the world, and so on the one side *nothing* is left over, and on the other side, as unique, *the world.* In this way idealism leads to realism if it is strictly thought out (*NB*, p. 85).

The self-effacing character of solipsism is explicit in the following passage in the *Tractatus:*

> Here it can be seen that solipsism, when its implications are followed out strictly, coincides with pure realism. The self of solipsism shrinks to a point without extension and there remains the reality coordinated with it (5.64).

The question is: Why is this self-effacement, if solipsism is true? Is it because truth of solipsism is not a truth at all? Wittgenstein is firm that solipsism is *true* but *cannot* be *said* and so, 'makes itself manifest' (5.62). The reason of self-denial is that self does not compete with the world being a limit-self and not belonging to the world. Self can only be in harmony

with the world and thus co-exist in an eternal unitary bond. This is what Wittgenstein calls the life of knowledge based on harmony. It is the life of Will that wills nothing contingent, and does not confront the contingent world as its equal (cf. *NB*, p. 88). It submits to the world in complete agreement. This agreement is the sign of happiness and knowledge (cf. *NB*, p. 75).

The limits of solipsism are the limits of life of knowledge. The life of knowledge which is a timeless life is independent of the contingent world. It renounces the amenities of the world as the graces of Fate (*NB*, p. 81). 'A life of knowledge is the life that is happy in spite of the misery of the world' (*NB*, p. 81). This realization of the ethical supremacy of the willing self requires that there be a world that is independent of the transcendental 'I'. Solipsism cannot do away with this independence of the world. This leads to an inherent tension within solipsism. The pull of monism is counterbalanced by the pull of dualism. So solipsism as a compromise ultimately gives way to realism. The world is metaphysically a stubborn reality which, in spite of its contingency, makes it possible for the moral Will to initiate actions. Actions require a causal process of temporal sequences. Moral Will influences this process from the outside and thus recognizes the independence of time and the world. This is realism because the self repeatedly comes back to the original position of being the *limit* of the world. Solipsism gives up. The mystical realization of the World-Will identity is stoutly compromised with the World-Will independence and duality. The result of this is not the break-up of the World-Will harmony which is the source of ethics and religion. Solipsism itself is a reiteration of the harmony. If the World-Will is God's Will then the harmony is the sheet-anchor of religious life.

Solipsism is not an intellectualist theory, according to Wittgenstein, since it cannot be said and expressed in language. It is the limit of intellectualism.[10] So the thinking self is removed from metaphysics. Thus there arises the possibility of the metaphysics of Will making room for solipsism of the willing Self. But Wittgenstein has already said that solipsism is the same as realism, so there is nothing that solipsism adds to the content of the metaphysics of the Will. Solipsism is, therefore, a limit-thesis and transcendentally true principle. There is no reason to believe that Wittgenstein was concerned with solipsism as an intellectualist thesis based on the Kantian distinction between transcendental and empirical self.[11] Schopenhauer, like Kant, saw both sides of the limit of solipsism: empirical as well as the non-empirical side. For Wittgenstein this distinction is as meaningless as solipsism itself. Intellectualism requires the distinction. But this is a limiting thesis and must be transcended.

Wittgenstein's transition from idealism to realism is a transition from Schopenhauerianism to the plain truth epitomised in the flat rejection of reason as the source of solipsism. Reason or thinking self becomes only a contingent principle which must lie in the language itself. Anything that

is higher, and so belongs to the unsayable must be removed from the contingent world. The inner tension within solipsism arises from the fact that logic as the discipline of reason is still the supreme instrument of thought. Metaphysics transcends logic by bringing into the fore the *necessity* of the non-contingent world of values, meanings and God. God is the limit of logic. God reveals Himself not in the world and reason but to the self-effacing ethical Will (cf. 6.432).

IV. LANGUAGE, TIME AND WILL

Did Wittgenstein revise the transcendental metaphysics of Will in his post-*Tractatus* writings? This is a significant question about Wittgenstein's approach to Will in his later philosophy. The answer proposed here is in the negative in view of the fact that in the middle period[12] Wittgenstein maintains the continuity of his anti-rationalist view of the nature of Will, ethics and religion. The inner currents of non-rationalism which are underlying the *Notebooks* and the *Tractatus* are manifest again in 'A Lecture on Ethics' where the ethical Will strikes back with vehemence. In a conversation with Waismann, Wittgenstein expressed the following view on the nature of ethics:

> According to the more superficial interpretation the Good is good because God wills it; according to the deeper interpretation, God wills the Good because it is good.
> I think that the first conception is the deeper one: Good is what God orders. For this cuts off the path to any and every explanation 'why' it is good, while the second conception is precisely the superficial, the rationalistic one, which proceeds as if what is good could be given some foundation.[13]

Wittgenstein thus continues to believe that ethical life does not depend upon the contingent fact of life; it is concerned with the non-contingent values that have a divine origin. Ethics is accordingly not of action, hope and progress. Hope gives way to renunciation, progress to contentment or happiness.

Wittgenstein's continuing interest in the transcendental Will—the willing subject—is primarily ethical, since, as argued earlier, the Will is the source of ethics. Ethics issues in actions in the world but its depth lies in its being rooted in the transcendental Will, that is, in its being beyond the contingent world of facts. As Wittgenstein says, 'ethics, if it is anything, is supernatural'.[14] Accordingly, the ethical values must lie outside the world, being the absolutely valuable which cannot be conditional on what happens in the world. What happens in the world is contingent and natural. The ethical values are supernatural in this sense. Wittgenstein makes the following remark in his *Culture and Value* which sums up his views on Ethics:

> What is good is also divine. Queer as it sounds, that sums up my ethics. Only something supernatural can express the supernatural.[15]

This statement makes room for the possibility of transcendental ethics and religion which seem to be derived from Wittgenstein's continuing faith that the world is a divine miracle and that there is a deep contingency about the world. The sense of wonder which a miracle engenders is the source of our deep religious and ethical feelings about the world. These feelings verging on the mystical are our basic attitudes to the world. Hence the importance of our being the willing subject—the subject that stands outside the stream of natural facts and experiences.

Wittgenstein's metaphysics of Will thus continues to throw the world into the limbo of contingency. However, it brings in language as the only mode of the world being what it is. Language is the house of the contingent world in that the former endows an essence—a structure—on the latter. Language 'pictures' the world and so the world has no form without language. Thus the contingent world gets a logical respectability only in language. It gets a logical mirror-image in language, Wittgenstein says in 'A Lecture on Ethics':

> Now I am tempted to say that the right expression in language for the miracle of the existence of the world, though it is not any proposition in language, is *the existence of language itself* (italics mine).[16]

The miracle of the world is thus expressed in the miracle of language. Both miracles are transcendental facts and so fall outside the limits of language. That is to say, the miracular character of language and world cannot be a matter within language and the world. The flight to the transcendental is thus inevitable if what Wittgenstein calls the ethical and religious feelings are to be sustained, and to be derived from the feeling of wonder at the existence of the world.[17] The possibility of ethics and religion is bound up with this mystical feeling that the world exists at all.

What exercises Wittgenstein philosophically is not only that the world exists miraculously but that we have an incurable urge to express this in *language*. Language itself being contingent and also being the expression of the contingency of the world, it cannot express the fact that the world's existence is a miracle. Hence any attempt to express this fact in language will result in the misuse of language. So says Wittgenstein,

> . . . the verbal expression which we give to these experiences is nonsense! If I say 'I wonder at the existence of the world' I am misusing language.[18]

This explains why Wittgenstein continued to be beset with the problem of the *limits* of language in his post-*Tractatus* investigations. If the urge for the transcendence is lurking within our understanding of the world, then the transcendence of language is inevitable. Hence the urgency of the problem of the limits of language. Philosophy, according to Wittgenstein,

shows that there are limits and to cross them is to speak nonsense. Nonsense arises because the inexpressible is being expressed in language. The sense of the 'beyond' haunts as much language as philosophy. Wittgenstein's plea is that the mystery (riddle) which language cannot solve must be kept out of its bounds.

Language, however, must be studied in its totality as it is the sole expression of the world and also of all our experiences of the latter. The later Wittgenstein as much as the early Wittgenstein is well aware that the understanding of language in its totality is the understanding of the world and ourselves. Therefore language is the focus of philosophical investigation. Language continues to be the preoccupation of philosophy since there is no other way than studying language to explore the structure of the given world which demands a logical order or form. However, according to Wittgenstein, there is no reason to feel that the contingent world is in need of philosophy's securing an ideal order for it. Philosophy only describes the order which must already be there. Philosophy is descriptive[19] and not explanatory. Wittgenstein forcefully puts this as follows in his *Philosophical Investigations:*

> Philosophy may in no way interfere with the actual use of language; it can in the end only describe it. For it cannot give it any foundation either.[20]

What he claims here is that the description of language is enough to understand all that language expresses including the order or essence present in the world. After all, as claimed earlier, language expresses the world and its essence. 'Essence is expressed by grammar' (*PI* Sec. 371), according to Wittgenstein. This reinforces Wittgenstein's earlier claim that language is the picture or representation of the world in the broad logical sense that the essence of the world is exactly the essence of language. The contingent world could not claim to have a non-contingent essence unless language has that essence or at least formulates it. In that sense logic or grammar of language is necessary to bring out the essence of language and the world. As Wittgenstein puts it,

> . . . the essence of language is a picture of the essence of the world; and *philosophy as custodian of grammar can in fact grasp the essence of the world, only not in the propositions of language, but in the rules for this language* which exclude nonsensical combinations of signs.[21] (italics mine)

The rules referred to here constitute the grammar of language and that is precisely what philosophy aims to understand as a 'custodian' of grammar.

Now we face the question: how is the idea of the philosophical custodianship of grammar a continuation of the metaphysics of the transcendental Will? Is philosophy as a meditation on the Will continuous

with philosophy as 'grammatical'? From the present perspective, the answer is 'Yes'. There are basically three arguments for this answer. First, grammar and its correlate, logic are themselves transcendental and are the expressions of the transcendental Will. Second, language as a temporal phenomenon is part of 'natural history' of man and so is rooted in the Will which is beyond time and history. Thirdly, Life which expresses itself in language is identical with the Will. Language is a replica of the transcendental Life and Will in the world. Language is the link between the contingent and temporal world and the non-contingent transcendental world of Will and Life.

The first argument is that Wittgenstein's later concept of grammar is a development of the earlier notion that 'logic is transcendental' (*Tractatus* 6.13). In his early philosophy logic itself was declared transcendental because though it 'pervades the world' (5.61) it itself remains outside the contingent domain of facts which constitutes the world. Logic is the domain of necessity: 'In logic nothing is accidental' (2.012), whereas in the world everything is accidental. 'Whatever we see could be other than it is' (5.634). Thus logic must remain outside the world. Philosophy as a 'custodian' of logic must also be outside the sphere of contingency, i.e. the world. This concept of logic is the precursor of the concept of grammar in the post-*Tractatus* philosophy. Grammar stands for the network of rules which govern what Wittgenstein called 'language-games'. Rules are the grammatical patterns of language-use. Wittgenstein makes the following remark to differentiate the rules from the actual use of words in a language-game:

> If we look at the actual use of a word, what we see is something constantly fluctuating. In our investigations we set over against this fluctuation something more fixed, just as one paints a stationary picture of the constantly altering face of the landscape.[22]

That which is fixed here is the grammar of the word. It is the rules which regulate its use. Grammar is the 'stationary picture' of the changing landscape of use. To have a logical picture of language is to set up its grammar. Wittgenstein therefore says:

> What interests *us* in the sign, the meaning which matters for us is embodied in the grammar of the sign. . . . Grammar is the account book of language. They must show the actual transactions of language, everything that is not a matter of accompanying sensations.[23]

The point of this remark is that language is governed by a grammar that is not itself fluctuating. It is fixed, formal and in a sense transcendental. The *facts* of language presuppose the *rules* of language. So rules (grammar) must be beyond the facts (world).

Grammar is the domain of the rule-structured reason. In that sense, grammar is co-terminus with formal reason (logic). This is evidence of the

fact that the thoughts which constitute reason are the essences of grammar and are also the essences of the world. But this is only one side of the story. Wittgenstein's effort is to make grammar and reason subservient to the transcendental Will. As we have seen already, the reason is not a thinking substance for Wittgenstein; it is the Willing subject's operative instrument. Thinking is how Will manifests itself in the grammatical mould. Will is the rule-following reason seen from the perspective of language. It is the source of all logical reasoning. The Will manifests itself as the rule-following reason and thus is the transcendental presupposition of language-use, i.e. the language-games. Wittgenstein puts it in the following way:

> Strangely enough, the problem of *understanding* language is connected with the problem of Will. Understanding a command before you obey it has an affinity with willing an action before you perform it.[24]

Thus, the problem of Will is very much a part of the problem of understanding of language. Language actualises the activities of the Will in the process of language-use. Language-games are the Will's manifestations. This may, of course, sound strange to one who believes that language-games are mere facts about language and therefore bereft of logical and metaphysical depth. But in the present perspective the language-games have a transcendental dimension in the Will itself—a unifying metaphysical background.

The above conclusion leads us to the second argument mentioned above, namely, that the concept of natural history connecting language to the temporal world requires a metaphysical background in the Will itself. Now the question is, how can we relate Will with time and history via language? That the Will is transcendental and therefore beyond time is Wittgenstein's premise in his early philosophy. This, I believe, is still the premise in his later philosophy. The only difference is that now Wittgenstein does not feel obliged to assert it in language. The focus is now on natural history, its temporality and human origin. Wittgenstein writes,

> What we are supplying are really remarks on the natural history of human beings, we are not contributing curiosities, however, but observations which no one has doubted, but which have escaped remark only because they are always before our eyes.[25]

Remarks on natural history are not themselves part of history, however, since they are bound to be grammatical remarks, and so must be ahistorical, to say the least. Natural history itself, however, succeeds in situating language in the historical dimension and makes it 'the spatial and temporal'[26] phenomenon. Language is part of the world process in space and time and this fact is manifest in language having its own history. What is remarkable here is not the history of language, but that language belongs to the natural history of man. Language embodies the process of concept-formation and language-use. It builds up the conceptual

connexions in the context of the human situation in the world. Thus there is a necessary connection between what human beings naturally do and the language they use or the language-games they play. As Wittgenstein puts it,

> Commanding, questioning, recounting, chatting, are as much a part of our natural history as walking, eating, drinking, playing.[27]

In that case, commanding, questioning, etc. are the linguistic counterparts of other physical activities like walking, eating, etc. Whereas the physical activities are not governed by rules except the conventions, the linguistic activities are 'language-games' with fixed rules.

Now if the human natural history would have been without a metaphysical background in the Will, it would be difficult to explain how a language-game would be possible. A language-game is something unpredictable[28] and therefore no reason can be assigned to it. Language-games are a free flow of the creative Will in man. They are rooted in man's Will and so are comprehensible as unfolding the totality of linguistic activities. No language-game can be considered in isolation. One can say in the Tractarian way that if one language-game is given, then all language-games are given.[29] The 'grammatical' space is the space of all language-games. This unity of the language-games—they are hanging together—is possible because of the unity of the human Will. Human Will generates the factual diversity of language-games. Besides, the succession of language-games in the world is an index of the time involved in them. Language-games do not take place all at a time. They are distanced from one another in time. But transcendentally speaking, they occupy the same logical (grammatical) space. Wittgenstein is interested in the unity of the grammatical space, that is, the perspicuity of the grammatical space where one can see language-games all at once, *sub specie aeternitatis*. Wittgenstein puts this as follows:

> Our grammar is lacking in this sort of perspicuity. A perspicuous representation produces just that understanding which consists in 'seeing connexions'. . . . The concept of perspicuous representation is of fundamental significance for us. It earmarks the form of account we give, the way we look at things. (Is this a *Weltanschauung*?)[30]

This *Weltanschauung* is not available within the natural history of which language is a part. We have to transcend natural history in order to have the 'perspicuous representation, i.e. unitary vision of language and the world. This must lie in the subjects' transcendental Will—the Will that goes beyond all factual contingencies and the obvious diversities. Thus we can say that the Will which transcends language is yet tied down with the diversity of the interconnected language-games. The unity of language-games, however, lies in the unity of the Will.

The transcendence of time by grammar is symptomatic of the fact that

language-games represent an image of the timeless Will. This timeless reality is much reminiscent of the Tractarian notion of the 'present' (6.4311). The eternal present which does not flow—'flow' is a misleading image of time—is identical with the frozen grammatical space. Transcendence of time is thus a requirement of grammar. In this sense time is subservient to grammar.

This brings in the third argument which we proposed to provide a link between timeless Will and time-infused language-world. Wittgenstein has an easy approach to the problem by his concept of form(s) of life. According to him, 'to imagine a language is to imagine a form of life'[31] which means that language carries the whole spectrum of human activities. Life, seen in the empirical way, is a positioned state of human existence; it is conditioned, limited and finite. It has a verbal dimension and is thoroughly structured with the rules of the symbolic organisation. Yet it has a dimension of givenness which is not dictated to by an *a priori* logical machinery. Therefore, says Wittgenstein,

> What has to be accepted, the given is—so one could say—*forms of life* (italics original).[32]

Does this then mean that the contingently given forms of life are all that philosophy must take note of? And, are the forms of life only cultural and sociological facts?[33] So there is nothing that philosophy can bring out as their transcendental features. The answer must be searched for in the spectrum of forms of life themselves. Forms of life defy a complete sociological explanation. For Wittgenstein, they are the ultimate or bedrock concepts of explanation and not to be explained as such. He has two reasons to press for this idea: first, that forms of life are not chosen or decided by us by argument and rationalization, they are simply there; secondly, that they do not express any agreement, conscious or unconscious, amongst the participants. Forms of life are not agreed cooperative or socially organized events. They are not such that we can derive an agreement from their acceptance. Acceptance is based on a primitive reaction rather than on a conscious agreement. That is why Wittgenstein says:

> When I obey a rule, I do not choose.
> I obey the rule *blindly*.[34]

Besides, he says,

> If I have exhausted the justifications I have reached bedrock, and my spade is turned. Then I am inclined to say: 'This is simply what I do.'[35]

This is to suggest that forms of life which include language-use and rule-following are without reason and must be accepted as given.

This argument for a non-rationalist acceptance of forms of life indicates that there is another avenue left for understanding forms of life. That

avenue leads to the Will that is the transcendental source of the forms of life. Forms of life in this way presuppose a unity that lies in the Will itself. If we take forms of life as a whole and see them as the diverse manifestations of Life in general, then we can find how Life and Will merge into each other. This, of course, presupposes that we have a concept of Life in the metaphysical sense. This metaphysical concept of Life is available in the *Notebooks*.[36] For obvious reasons Wittgenstein has no need now to assert this in language. But if forms of life are available, can it be the case that the metaphysical concept of Life is not possible? It cannot be so since forms of life in the plural presuppose that Life is the universal metaphysical background. Life is forms of life seen *sub specie aeternitatis*. This transcendental perspective imposes itself on us for the reason that we cannot understand the forms of life unless we transcend the limits of language, that is, unless we invoke the standpoint that rises above the diversity and conditionality of forms of life. If to imagine language is to imagine a form of life, then to transcend language is to transcend the form of life.

Once the transcendental standpoint[37] is made available, it is logical to argue that the transcendental Will and Life are one and the same. That is to say that to conceive of a universal Will is the same as to conceive of a universal Life. The point is that there is no reason to maintain that beyond the diversity of language and life-forms there is no unity of a metaphysical locus. Wittgenstein is acutely conscious of the possibility of the collapse of language-games and the forms of life in the absence of the metaphysical locus. The collapse is precipitated by the lack of a centre i.e., a metaphysical subject. The image of the transcendental self is well illustrated by Wittgenstein in the following way in his *Philosophical Investigations*:

> Think of a picture of a landscape, an imaginary landscape with a house in it.—Someone asks 'Whose house is that?'—The answer, by the way, might be 'It belongs to the farmer who is sitting on the bench in front of it.' But then he cannot, for example, enter the house.[38]

This is the predicament of the transcendental self. The self is not the owner of language and world and yet it is their transcendental presupposition. Self cannot enter language and world either. For this reason self must be the limit of language and the world.

Our argument that the transcendental self is the willing subject follows from Wittgenstein's own admission in his early philosophy that there is a self as a willing being that stands as the metaphysical locus of language and world. This argument, though not explicit in his later writings, is present implicitly in the very conception of language as a system of rule-governed activities. The rule-follower is not just a fortuitous agent to carry on language-use. The rule-follower is a transcendental presupposition of rule-following. The need of a transcendental agent is the *sine qua non* of the concept of the act of rule-following.

The transcendental relationship between language and Will is not only justifiable in grammar and the rules of language, but also has a broader metaphysical sanction. First of all, the transcendental perspective is at the foundation of the philosophical enquiry into the essence of language and the world. Secondly, the demands of ethics and religion sanction the transcendence of language and the world. Thus philosophy as 'the custodian of grammar' has the legitimate interest in the metaphysics of the transcendental Will.

To sum up, Wittgenstein's philosophical development in the later period is a continuation of his interest in the metaphysics of Will. This itself is a result that is implicitly evident in the corpus of Wittgenstein's later writings.

Notes and References

1. Wittgenstein, *Notebooks* 1914–1916 translated by G.E.M. Anscombe, Blackwell, Oxford, 1961, second edition 1971. Henceforward it is to be abbreviated as *NB* and all references will be the page references.
2. Wittgenstein, *Tractatus Logico-Philosophicus*, translated by D.F. Peans and B.F. McGuinness, Routledge and Kegan Paul, London, 1961. Henceforward it is to be abbreviated as *Tractatus* and all references will be the decimal numbers in the text.
3. See P. Engelmann, *Letters from Ludwig Wittgenstein with a Memoir*, Blackwell, Oxford, 1967; and also Brian McGuinness, *Wittgenstein: A Life*, Duckworth, London, 1988, for the personal accounts of his philosophical objectives. Engelmann writes,

   > What he (Wittgenstein) wants to demonstrate is that such endeavours of human thought to 'utter the unutterable' are a hopeless attempt to satisfy man's eternal metaphysical urge (p. 96).

4. Wittgenstein, 'A Lecture on Ethics', *Philosophical Review*, 74, 1965, pp. 11–12.
5. See Roy E. Lemoine, *The Analgogic Theory of Wittgenstein's 'Tractatus'*, Mouton, The Hague-Paris, 1975.
6. The contingency of the world is a metaphysical fact. It cannot be said. Wittgenstein writes,

   > . . . no part of our experience is at the same time *apriori*. Whatever we see could be other than it is. Whatever we can describe at all could be other than it is. There is no *a priori* order of things. (*Tractatus*, 5.634)

7. See Robert J. Fogelin, *Wittgenstein*, Routledge and Kegan Paul, London and New York, 1976; second edition 1987, pp. 94–95. See also A. Phillips Griffiths, 'Wittgenstein, Schopenhauer and Ethics' in *Understanding Wittgenstein*, Royal Institute of Philosophy Lectures 7, 1972–73; Macmillan, London, 1974, p. 105.
8. Arthur Schopenhauer, *The World as Will and Idea*, translated by R.B. Haldane and J. Kemp. 3 volumes, London, 1906. See also his *Parerga and Paralipomena* volume II, translated by E.F.J. Payne, Clarendon Press, Oxford, 1974, chapters III and IV.
9. The notion of time in the *Notebooks* and *Tractatus* is connected with the configuration of objects, i.e. states of affairs. Will is not in time; however, all psychological processes like wish and desire are in time. See *Tractatus* 6. 373. 6.374.
10. The intellectualist interpretation of solipsism is rampant. It is the basis of the post-positivist interpretation of the early Wittgenstein. Its chief dogma is that solipsism is based on rationalist premises. Solipsism is accordingly considered as a matter of reason rather than of the will. This is found in D.F. Pears, *The False Prison*, volume 1, Clarendon Press, Oxford, 1987, P.M.S. Hacker, *Insight and Illusion*, Clarendon Press, Oxford, 1972, and Hintikka, 'On Wittgensteins' "Solipsism"' in *Essays on Wittgensteins' Tractatus* edited by I.M. Copi and R.W. Beard, Routledge and Kegan Paul, London, 1966, pp. 157–1961.
11. See Hacker, *Insight and Illusion*, pp. 58–85, for the distinction between transcendental solipsism and empirical realism.
12. See especially 'A Lecture on Ethics', *Philosophical Review* 74, 1965, *Philosophical Remarks* edited by Rush Rhees, Blackwell, Oxford, 1975 and also Waismann's *Wittgenstein and the Vienna Circle*, Blackwell, Oxford, 1979.
13. Waismann's, 'Notes on Talks with Wittgenstein', *Philosophical Review*, 74, 1965, p. 15.
14. 'A Lecture on Ethics', p. 7.
15. Wittgenstein, *Culture and Value*, edited by G.H. von Wright, translated by Peter Winch, Basil Blackwell, Oxford, 1977, p. 3.
16. 'A Lecture on Ethics', p. 11.
17. Ibid., p. 9.
18. Ibid., p. 8.
19. See Wittgenstein, *The Blue and Brown Books*, Blackwell, Oxford, 1958, p. 18. and *Philosophical Investigations* translated by G.E.M. Anscombe, Blackwell, 1953, section 124.
20. *Philosophical Investigations*, 124.
21. *Philosophical Remarks* section 54.
22. Wittgenstein, *Philosophical Grammar* translated by A. Kenny, Blackwell, Oxford 1974, section 36.
23. Ibid., section 44.
24. *Philosophical Review*, section 13.
25. *Philosophical Investigations*, section 414.
26. Ibid., section 108.
27. Ibid., section 25.
28. Cf. Wittgenstein, *On Certainty*, translated by D. Paul and G.E.M. Anscombe, Blackwell, Oxford, 1974, section 559.
29. Cf. *Tractatus*, 5.524.
30. *Philosophical Investigations*, section 122.
31. Ibid., section 19.
32. Ibid., p. 226.
33. For further discussion, see J. Lear 'Transcendental Anthropology' in *Subject, Thought and Context*, edited by P. Pettit and John McDowell, Clarendon Press, Oxford, 1986.
34. *Philosophical Investigations*, section 219.
35. Ibid., section 217.
36. See *NB*, pp. 77 and also *Tractatus* 5. 621.
37. Cf. Lear, 'Transcendental Anthropology' in *Subject, Thought and Context.*
38. *Philosophical Investigations*, section 398.

Stalnaker on Possible Worlds and Propositions

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Stalnaker conceives possible worlds semantics as a framework or a methodological device for dealing with various philosophical problems and semantic questions.[1] Unlike Aristotle and Frege who take terms and propositions respectively as the basic units or primitives of their semantic systems, Stalnaker considers possible worlds as the primitive elements of his framework. The decision to start with possible worlds according to Stalnaker, is a methodological decision.[2] Because being primitives, possible worlds are free from all sorts of metaphysical commitments regarding their nature. An advantage of taking possible worlds as primitives is that propositions can be defined in terms of possible worlds. The present paper gives a brief exposition of the possible world definition of propositions followed by a critical examination.

The possible world definition of proposition is stated as follows:

> A proposition is a function from possible worlds into truth-values.[3]

For an understanding of this definition, we have to clarify three terms that occur in the definition. They are 'possible worlds', 'function' and 'truth-values'. Possible worlds, according to Stalnaker, are the 'ways things might have been' or alternative states of the world. There is only one concrete particular world we inhabit and this very same world could have existed in different ways than the way it exists now. Since the world as a whole could possess these abstract alternative states, they can be called comprehensive or maximal properties of the world.[4] By possible worlds we mean these abstract maximal properties. There are two truth-values; the members of the set {T,F}. The role of these truth-values is to select a subset from a set of possible worlds. The truth-values say which are the members of the selected subset, and which are not. A function is defined as a rule for assigning values to any member of a specified domain of arguments. Hence the definition of proposition as a function from possible worlds into truth-values, according to Stalnaker, means that a proposition is 'a rule for selecting a subset from the set of possible worlds. The role of the values *true* and *false* is simply to distinguish possible worlds that are members of the selected subset from those that are not.'[5] Under this programme, the subset of a domain of possible worlds for which the

proposition takes the value T fully determines that proposition relative to the same domain. In other words, a proposition can be analyzed into a set of possible worlds which assigns it the value T under a given interpretation. That is, the set of possible worlds that assigns the value T to a proposition provides identity conditions for the proposition.

We shall try to elucidate this definition with the help of examples. Let us assume that there are four worlds, W_1, W_2, W_3 and W_4, and there are three propositions, viz. 'Unicorns fly', 'Pegasus is a winged horse' and 'Caesar crossed the Rubicon'. According to Stalnaker's analysis, these propositions can be reduced to those worlds relative to which they are true. Table 1 is an example of the analysis of the above propositions, in terms of the worlds at our disposal.

Table 1

	W_1	W_2	W_3	W_4
Unicorns fly	F	F	T	T
Pegasus is a winged horse	F	T	T	F
Caesar crossed the Rubicon	T	T	T	F

Accordingly, the proposition 'Unicorns fly' can be analyzed into W_3 and W_4 and 'Pegasus is a winged horse' into W_2 and W_3 and 'Caesar crossed the Rubicon' into W_1, W_2 and W_3. Under this strategy, if two propositions, say, *P* and *Q* take value T for the same set of possible worlds, we say that *P* and *Q* are equivalent. The identity conditions for functions are purely extensional. That is, if two functions, say, *f* and *g* have the same domain of arguments, and have the same values for each argument, then the functions *f* and *g* are identical. From this, it follows that if the propositions *P* and *Q* have same set of possible worlds as arguments and have the same value T, then *P* and *Q* are identical. That is, if two propositions get the same truth-value uniformly in all possible worlds, they cannot be distinguished from each other. It would imply that equivalent propositions are necessarily identical. That is, in the case of two equivalent propositions, we cannot conceive a world relative to which one is true and the other is false.

There are philosophers who would not agree with Stalnaker in defining propositions in terms of possible worlds. They argue that propositions have to be taken as primitive and possible worlds should be reduced to propositions. Such a reductionist programme has been undertaken by Robert M. Adams. Adams is of the opinion that possible worlds can be understood in terms of world-stories. A world-story is a maximally consistent set of propositions.[6] A maximally consistent set of propositions is such that given any proposition *P*, either *P* or ~*P* is a member of the set. All those propositions which are members of a maximal set or world-story can be true together. According to the analysis, that a proposition is true in some

or all possible worlds, means that it is a member of some or all world-stories. And a proposition is possible if and only if it is a member of at least one world-story. And a proposition is necessary if and only if it is a member of all world-stories.

Stalnaker, on the other hand, holds on to the view that instead of reducing possible worlds to the maximally consistent set of propositions, the propositions themselves should be reduced to possible worlds. The advantage of such a reduction is that, by this move, it is possible to define the three undefined notions, viz. *proposition, consistent* and *contradictory* presupposed in the world-story theory. Hence Stalnaker makes an attempt to convert the world-story theory into a theory equivalent to possible world theory. For this he analyses world-story theory and brings forth its basic assumptions. In this Stalnaker's purpose is to show how the world-story theory can be modified into a sort of possible world theory with economy in the number of basic notions.[7]

Consistency is considered as one of the properties of a set of propositions. If the members of a set of propositions can be true together, then the set is said to be consistent. Since a world-story is a maximally consistent set of propositions, it is based on the following assumption.

A_1. The set of all true propositions is consistent.[8]

If the set of all true propositions is consistent, then naturally all its subsets are also consistent. This is the second assumption of the world-story theory which is stated as follows.

A_2. Any subset of a consistent set is consistent.[9]

The notion of contradictory, Stalnaker says, can be analyzed in terms of consistency. Two propositions *P* and *Q* are contradictory if and only if the set $\{P, Q\}$ is not consistent. That is, for every consistent set of propositions Γ, either $\Gamma \cup \{P\}$ is consistent or $\Gamma \cup \{Q\}$ is consistent. This analysis is based on the assumption

A_3. Every proposition has contradictory.[10]

The assumptions of the world-story theory discussed so far, according to Stalnaker, provide a minimal theory of propositions in the sense that the theory under consideration does not impose any structure on the propositions except the structure required by the propositional relations such as compatibility, equivalence, implication, and so on. The assumptions of the world-story theory ensure that these relations have the right properties. However, the minimal theory of propositions is not equivalent to the world-story theory of Adams. To make it equivalent to the world-story theory, the intuitive idea behind the world-story theory should be added to it as one of its assumptions, for the minimal theory of propositions does not say that a consistent set of propositions is a subset of a world-story. Since the world-story is a maximal consistent set of propositions, we may add to the minimal theory, the following assumption.

A_4. Every consistent set is a subset of maximal consistent set.[11]

The world-story theory can be made equivalent to the possible world theory if the two theses resulting from the possible worlds analysis of propositions are added as two further assumptions of the world-story theory. One of them is the closure condition stated as follows.

A_5. For every set of propositions Γ, there is a proposition A such that Γ implies A and A implies each member of Γ.[12]

The closure assumption tells that for every set of propositions (true together) there is a proposition which says that each member of the set is true.[13] The second thesis to be added to the assumptions of the world-story theory is the identity condition.

A_6. Equivalent propositions are identical.[14]

With these two additions, the world-story theory becomes equivalent to possible world analysis as far as the structure imposed on the set of propositions is concerned. In accordance with the possible world analysis of propositions, the set of possible worlds relative to which a proposition takes the value true uniquely determines a proposition. Similarly for each set of world-stories, there is a unique proposition which is a member of each of the world-stories of the given set only. That is, every function from world-stories into truth-values will point out to a unique proposition which is a member of those world-stories where the proposition takes the value to be true. Since world-story is a maximally consistent set of propositions, by the truth of a proposition in a world-story, we mean that it is a member of that world-story.

With the addition of A_5 and A_6 to the assumptions of the world-story theory, the world-story theory has become equivalent to the possible world theory in many respects. However, a major difference between the two theories remains to be resolved. That is, the possible world theory makes an attempt to define propositions whereas the world-story theory takes propositions as primitive and defines possible worlds in terms of propositions. According to Stalnaker, the closure condition added to the assumptions of the world-story theory gives us the clue to the elimination of this difference. Stalnaker's purpose in eliminating this difference is to make world-story theory equivalent to possible world theory so that even proposition, the basic notion of world-story theory, may be defined. The closure condition tells what is to be considered as a basic proposition. Once the basic proposition is identified, the other propositions can be defined in terms of them. Stalnaker states it as follows:

> We can deduce from what has already been built into the world-story theory that there is a set of propositions of which all propositions are truth-functions: this is the set of strongest contingent propositions—those propositions which are members of just one world-story.[15]

The closure condition says that there is a proposition which is implied by a consistent set of propositions Γ. This proposition implies each member of the given consistent set of propositions. We shall call this the closure proposition or, in short, C-proposition of the set Γ. That is, the set of proposition Γ implies a unique C-proposition, and a C-proposition implies every member of a given set Γ. Hence this is the strongest contingent proposition of the set Γ. According to Stalnaker, the closure condition of the world-story tells that there are propositions which are members of just one world-story, and they can be taken as basic propositions. These are the strongest contingent propositions, and any proposition can be defined as a truth-function from the set of basic propositions into truth values. That is, propositions can be defined as sets of C-propositions or truth-functions of the C-propositions of the world-story. Let us, for example, take three world-stories M_1, M_2, and M_3. The proposition 'Caesar crossed the Rubicon', we shall assume, is a member of each of the world-stories and of no other world-stories. Each of the above world-stories has a C-proposition. We shall call them C-M_1, C-M_2, and C-M_3 respectively. The proposition 'Caesar crossed the Rubicon' according to Stalnaker's strategy, can be analyzed into the set {C-M_1, C-M_2, C-M_3}. This definition of proposition, Stalnaker claims, is identical with the possible world definition.

We have already seen that world-story theory takes propositions as primitives whereas the possible worlds theory defines propositions. Stalnaker's reduction of propositions to possible worlds is motivated by the idea that highly structured entities should be analyzed in terms of those entities which are relatively less structured. The propositions are highly structured by the relations of contrary, contradictory, compatibility and so on. The possible worlds, on the other hand, are not structured by any definite set of relations. It does not mean that there are no relations at all between possible worlds. There will be certain relations among the possible worlds such as the relation of similarity, or that of accessibility, depending upon the special applications of possible worlds. But the notion of possible world can be understood without taking into consideration these relations. The notion of proposition, on the other hand, cannot be separated from the relations of equivalence, compatibility etc., that exist between propositions.[16]

Though possible worlds themselves are not structured, the propositions defined in terms of possible worlds are structured by the propositional relations. In the world-story, structure is derived from the primitive notion of consistency. On the other hand, in the case of propositions defined in terms of possible worlds the notion of consistency and the other propositional relations can be defined in terms of set-theoretic relations

between sets of possible worlds determining propositions. Given Stalnaker's analysis, the notion of consistency may be defined as follows. Let A and B be two sets of possible worlds, the former determining the proposition *P* and the latter *Q*. *P* is said to be consistent with *Q* if and only if the set of possible worlds determining *P* is non-empty subset of B or B is non-empty subset of A. Similarly, *P implies Q* if and only if the set of possible worlds that determines the contradictory of *Q* is not a subset of possible worlds determining *P*. The properties of the relation of implication is that it is reflexive, transitive, and preserves truth. Stalnaker's analysis of implication in terms of set-theoretic terms suggests that it retains the above-mentioned properties.

Stalnaker's programme of defining proposition in terms of possible worlds seems to be very attractive. Yet there are a few difficulties inherent in his theory of proposition. In what follows, we shall raise a few objections which taken together would count against the tenability of the possible world definition of proposition. Stalnaker, we have seen, defines a proposition as a rule for selecting a subset from a domain of possible worlds. That is, given a proposition, it selects a set of possible worlds into which the proposition can be analyzed or reduced. But proposition being a rule for selecting a set of possible worlds, how can the rule itself be identical with or reducible to the set of possible worlds? Moreover, the function of possible worlds is just to determine the truth-values of propositions. Hence possible worlds are devices for giving truth-values to propositions. It is not clear how Stalnaker can reduce the proposition to the possible worlds which are themselves devices.

If a proposition is defined as a function from possible worlds into truth-values, then there arises the question: what kind of entities shall we assign truth-values to? Propositions are eliminated as such entities from the start because proposition has been used as a function to obtain truth-values. Therefore, the truth-values seem to have no other candidates except possible worlds. However absurd this view may appear, it seems that we assign truth-values to possible worlds. A proposition can be true or false. But how can a possible world be true or false? Truth and falsity are the properties of propositions. If the very same properties are assigned to possible worlds, how to distinguish between a possible world and a proposition? According to Stalnaker, possible worlds *qua* possible worlds do not have any particular nature of their own. Possible worlds assume the nature depending upon their applications. From this view of possible worlds, we may conclude that for defining propositions, possible worlds assume the nature of propositions. A possible world is a 'way things might have been'. And the ways things might have been, cannot be true or false unless we identify them with propositions.

A close examination of the truth table of the traditional theory of proposition and the assignment of truth-values to possible worlds in the possible world theory of proposition, reveals the similarity as well as the

difference between the two. Let us assume that there are only two possible worlds W_1 and W_2 at our disposal. According to Stalnaker's theory there can be only four propositions, *P, Q, R,* and *S* definable in terms of them as in Table 2. That is, the number of possible worlds being *n* we can have only 2^n propositions. Since the identity of the equivalent proposition is a corollary of the possible world definition of proposition, any other proposition equivalent to any one of the 2^n propositions would be identical with it. The truth table of the propositional calculus, on the other hand, says that given *n* number of propositions we can have 2^n possible interpretations (possible worlds) of propositions. The assignment of values to W_1 and W_2 clearly shows that we have assigned all possible values to them which we assigned to propositions in a truth table and the resultant 'propositions' are, in fact, the four different interpretations resulting from the assignment of the truth-values to W_1 and W_2. The main difference between the two theories, however, is that what we call propositions in one becomes possible worlds (interpretations) in the other and *vice versa.* In short, the two theories are not radically different. From the viewpoint of the traditional theory, the way of assigning truth-values to possible worlds is not different from that of assigning truth-values to propositions. Hence the notion of possible world in Stalnaker's theory is same as the notion of proposition in the traditional theory. Since each interpretation in the traditional sense is considered as unique, the possible world theory yields a more fine grained notion of proposition.

Table 2

	W_1	W_2
P	T	T
Q	T	F
R	F	T
S	F	F

Table 3

M-C_1	*P*	*Q*
M-C_2	*P*	~*Q*
M-C_3	~*P*	*Q*
M-C_4	~*P*	~*Q*

The strength of Stalnaker's argument lies in that with the addition of A_5 and A_6 the world-story theory can be converted into a theory equivalent to the possible world theory. However, it can be shown that these two theories differ in many respects. One of the consequences of the possible world definition of proposition is that given a set of possible worlds determining a primitive proposition, each of its non-empty subsets would determine a unique proposition each that is consistent with it. The analysis of proposition in terms of closure propositions of world-stories, on the other hand, is different from this. A world-story is a maximally consistent set of propositions: for any proposition P, either P or $\sim P$ will be members of the world-story. Accordingly, if there are only two propositions, P and Q, we have four maximally consistent sets of propositions as in Table 3. Stalnaker's analysis suggests that corresponding to each maximally consistent set or world-story there is a closure proposition which implies each one of the members of the maximally consistent set and the members of each maximally consistent set taken together imply a closure proposition. M-C_1, M-C_2, M-C_3, and M-C_4 in the table stand for closure propositions. According to Stalnaker any proposition can be defined as functions from set of closure propositions into truth values. For instance, the proposition P can be defined as the set {M-C_1, M-C_2} and $\sim Q$ the set {M-C_2, M-C_4}. Our point is that, this analysis, in spite of its apparent similarities to the possible world definition of proposition, is quite different from it. Given n number of propositions we can have 2^n maximally consistent sets and an equal number of C-propositions. To define any one of the primitive propositions in terms of C-propositions we require 2^{n-1} C propositions. That is, given that there are only four propositions, none of which is contradictory to others to define any one of them we require eight basic propositions. Given the set of C-propositions that uniquely determines the primitive proposition P, each of its non-empty subsets would uniquely define truth-functional conjuncts of P whereas each of its super sets would determine truth-functional disjuncts of P. For example, Table 3 shows the set {M-C_1, M-C_2}, defines the primitive proposition P, and its proper non-empty subsets {M-C_1}, {M-C_2} define P & Q, and P & $\sim Q$ respectively, while one of its super set {M-C_1, M-C_2, M-C_3} stands for the proposition $P \vee Q$. In the possible world analysis, on the other hand, each non-empty subset of a set of possible worlds defining the primitive proposition P uniquely determines a primitive proposition each. In fact, the possible world analysis has a very serious lacuna as it cannot accommodate truth-functions of the primitive propositions within its framework, that is to say, in the possible world theory we have no mechanism to differentiate primitive propositions from their truth-functions. For example, the set {W_1, W_2} defines P and its subset {W_1} stands for Q. Since Stalnaker's basic strategy would be to define the non-primitive propositions also in set theoretic terms P & Q can be defined as {W_1, W_2} $\cup\cap$ {W_1} which would give the set {W_1}, and $P \vee Q$ as the set {W_1, W_2} $\cap\cup$ {W_1} that results in the set {W_1, W_2}. Unfortunately this

would mean that P & Q is equivalent to Q, and $P \vee Q$ is equivalent to P. Since the identity of the equivalent proposition is a corollary of the possible world theory we get the odd consequence that $P \vee Q$ is identical with P, and P & Q is identical with Q. Therefore, we may say that both the strategies are not equivalent in a very important sense in spite of adding A_5 and A_6 as assumptions of the world-story theory.

One of the disadvantages of the world-story theory is that it is humanly impossible to define any primitive proposition, for their number being infinite in order to define any one of them we require infinitely many C-propositions. Stalnaker might argue his possible world definition would not fall a prey to this, for one does not have to take the set of all possible worlds but only the relevant ones. For example, to define the proposition 'it is raining' we need to consider those possible worlds where rain occurs. But what are the criteria of selecting the relevant set? Of course, the worlds where rain occurs. But it is always possible to conceive infinite number of possible worlds where rain occurs, and we have to take all of them to define it if we accept Stalnaker's strategy.

It may be noted that definition of proposition in terms of possible worlds is too narrow a definition. What comes under its scope is the set of contingent propositions and it fails in dealing with tautologies or necessary truths. As Stalnaker himself admits, it is a consequence of possible world definition that there is only one necessary truth and only one necessary falsehood.[17] A necessary truth is one which is true in all possible worlds. Even if there are a number of them, since each one of them takes the value T in all possible worlds there is no mechanism by which we can individuate them. This is quite unacceptable to us as we are aware of the existence of more than one necessary truth. Moreover, the identity of equivalent propositions suggests when a person believes that P, which is necessarily equivalent to Q or logically implies Q, he believes Q as well. But such a consequence would be quite counter-intuitive, for very often one may believe that P, disbelieving that Q. Stalnaker is quite aware of these problems, but admits that he has no final solutions. However, he is of the opinion that propositions as sets of possible worlds can be considered as the right objects of intentional mental states.

One motivation for defining propositions as sets of possible worlds is that they function as right candidates for being the objects of the propositional attitudes. But here again the strategy seems to be counter-intuitive. A possible world is a way things might have been, and another possible world is another way things might have been. Hence each of the possible worlds are discrete entities. As Stalnaker lays it down,

> The formalism of possible worlds semantics assumes that possible states of the world are disjoint alternatives, and that everything that can be said *within* a given *context* can be said distinguishing between these alternatives. This assumption of internal completeness is re-

> quired by the explanation of propositional contents as sets of possible states of the world, and this explanation is motivated by our account of the nature of representation. Since to represent the world is to locate it in a space of alternative possibilities content should be explained in terms of those possibilities.[18]

If the objects of mental states—such mental states as believing and desiring—are considered as propositions defined as sets of possible worlds, it would mean that the objects of mental states are a set of different ways things might have been, unless each set of possible worlds, is taken as a singleton set. That is, when I believe that *P*, I do not believe many different ways things might have been, but only one way things might have been. When I believe that it is raining, the object of my belief is not a set of different states of the world where rain occurs, but only one state of the world where it rains.

The discreteness of possible worlds mentioned above poses certain theoretical difficulties in the definition of propositional contents as sets of possible worlds as it 'concerns the relations between possible worlds, and between possible worlds and propositions within any given interpretation or application of possible worlds semantics'.[19] In order to analyze propositions into a non-singleton set of possible worlds, we must assume that the very same proposition which is true or false relative to one world, becomes true or false relative to other possible worlds as well. For this, the identity of propositions across the relevant set of possible worlds is to be asserted. The truth of a proposition across a set of possible worlds, suggests that there is something common among these possible worlds. If there is something common to a set of ways things might have been, how could we say that they are completely different or discrete? They may be parts of the one and the same way. If a proposition, for example, is true relative to two worlds, it is always possible to find a more comprehensive world which includes both the worlds as parts. Hence a given set of possible worlds into which a proposition is analyzed, cannot be taken as total ways or maximal states of the world. These worlds are only partial ways of a grand total way. If so, any proposition can ultimately be reduced to one and only one way.

If a proposition is true, say, relative to two possible worlds, then that proposition is identical across these two worlds. A possible world is a way things might have been. And another possible world is another way things might have been. Hence in order to assert a proposition across two possible worlds, it is to be assumed that a certain ordering of things remains the same in spite of all other differences in these worlds. The possible world definition of proposition is based on this assumption of transworld identity of propositions. The identification of propositions across possible worlds is possible only if propositions are about the same things in both the worlds, and in both the worlds these things about which propositions are asserted stand in the same relation. If so, the truth of

propositions across possible worlds depends on the transworld identification of things or individuals. However, it is not clear how by granting identity of things and a certain set of relations existing among them across possible worlds, one can maintain the discreteness of worlds, required for the possible world definition of propositions. Thus the possible world definition of proposition faces a paradoxical situation. The definition requires the possible worlds to be discrete and at the same time presupposes the transworld identification of individuals and certain ordering of relations across possible worlds which would not grant the discreteness of possible worlds. If possible worlds are not discrete entities then a proposition can ultimately be analyzed into a singleton set of possible worlds only. If each of the propositions is reducible to a singleton set of possible worlds each we do not define propositions in terms of possible worlds, but instead we just rename a proposition as a possible world—an abstract entity picturing a state of the world.

Our main objection against possible world definition has been that it does not define proposition as the definiens assume the nature of definiendum. Strictly speaking, a possible world being the way (some) things might have been, pictures a part of the world. As this picture is either true or false, it seems that the possible world theory does not distinguish a proposition from a possible world. In fact, it is a merit of the definition that it defines the basic notions of *consistency* and *contradictory* in set-theoretic terms. However the price for this is too high: the possible world theory is more complicated than the theory whose primitives are propositions. Despite his claim that possible worlds are the primitives, the real primitives of Stalnaker's system are sets. The undefined notion of set and the whole of the elementary set-theoretic operations and relations are presupposed in the theory. The possible worlds are considered as the elements of the set mainly because it is 'the level abstraction that captures what is essential to representation'.[20] It remains to be clarified how the representation by a possible world differs from that by a proposition except in name.

Notes and References

1. Robert Stalnaker, 'Possible Worlds and Situations', *Journal of Philosophical Logic*, 15, 1986, p. 110.
2. Ibid., p. 112.
3. Robert Stalnaker, *Inquiry*, Cambridge, Massachusetts, MIT Press, 1984, p. 2.
4. Michael Pendlebury, 'Stalnaker on Inquiry', *Journal of Philosophical Logic*, 16, 1987, p. 237.
5. Ibid., p. 2.
6. Cf. Robert M. Adams, 'Theories of Actuality' in *The Possible and the Actual*, edited by Michael Loux, p. 204.
7. Cf. Robert Stalnaker, *Inquiry*, op. cit., p. 52.

8. Ibid., p. 52.
9. Ibid., p. 52.
10. Ibid., p. 52.
11. Ibid., p. 53.
12. Ibid., p. 55.
13. The assumption is a consequence of the possible world analysis of propositions because given any proposition, a possible world specifies whether it is true or false relative to it. The closure proposition has the same function in the world-story theory. Given any proposition the closure proposition tells you whether the former is implied by it or not. In other words, it specifies whether the given proposition is a member or not. If it is a member of the consistent set, then definitely it is true relative to it.
14. Stalnaker, *Inquiry*, op.cit., p. 55.
15. Ibid., p. 56.
16. Cf. Ibid., p. 54.
17. Ibid., p. 3.
18. Stalnaker, 'Possible Worlds and Situations', op. cit., p. 118.
19. Ibid., p. 118.
20. Ibid., p. 115.

Searle and the Homuncular Fallacy

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A widely acknowledged assumption made by many cognitive scientists is that the only psychology that could possibly succeed in explaining the complexities of intentionally characterized abilities and activities must posit internal representations.[1] According to Daniel Dennett, this assumption 'has been deemed obvious by just about everyone except the radical behaviorists. . . .'[2] Nevertheless, an acceptance of this assumption seems to lead to what John Searle calls the 'homunculus fallacy'.[3] If genuine, this fallacy seems to provide good reasons for rejecting the view that the only psychology that could possibly succeed in explaining the complexities of intentionally characterized abilities and activities must posit internal representations. In this paper I will argue that the representationalist has an answer to the homuncular fallacy. By incorporating ideas from the later writings of Wittgenstein I will show that it is possible to non-fallaciously explain intentionally characterized abilities and activities by positing internal representations.

To begin with, Searle identifies two forms the homuncular fallacy may take; one for semantics and the other for syntax. Briefly, the semantic form of the homunculus fallacy turns on the claim, explicitly stated by Dennett, that for the representationalist 'nothing is intrinsically a representation of anything; something is a representation only *for* or *to* someone . . .'[4] Thus, if the semantic (representational) character of representations must be made reference to in explaining intentionally characterized abilities and activities, then it will be necessary to posit some internal interpreter of the representations—a homunculus.[5] But now, because interpretation is itself an intentional activity, the representationalist seems to face a dilemma. Either this intentional activity will be explained by positing additional representations, or there is some explanation for the activity that does not require making reference to representations. In the first case, an infinite regress threatens. On the assumption that, for representationalism, something is a representation only *for* or *to* someone, then additional interpreters—sub-homunculi—of the representations need to be posited. But these sub-homunculi are themselves interpreters of representations which require positing still more representations *ad indefinitum*. In the second case, if intentionally characterized abilities and activities at some

level can be explained *without* making use of representations, then it would seem that the same sort of account could be extended to all other levels, making reference to representations at any level otiose. As Searle says, '[A]ll the higher levels reduce to this bottom level. Only the bottom level really exists; the top levels are all just as if.'[6] In either case then, there seems to be good reason for rejecting representationalism. Thus, the semantic form of the homuncular fallacy says that it is fallacious to suppose that using the representational (semantic) character of representations will allow for non-question begging explanations of intentionally characterized abilities and activities.

The syntactic form of the homunculus fallacy is similar to the semantic. Sometimes it is thought that representations will enter into explanations of intentionally characterized abilities and activities in virtue of their syntactic characteristics, *not* in virtue of their semantic characteristics.[7] According to Searle, though the 'ascription of syntactical properties is always relative to an agent or observer who treats certain physical phenomena as syntactical.'[8] Thus, without a homunculus *for whom* certain physical phenomena are treated as syntactical, there would not even be 'a syntax to operate with.'[9] If correct, then the syntactic aspect of the homuncular fallacy is simply a special case of the semantic. Since the syntactic characteristics of representations are characteristics only *for* or *to* some agent or observer, then the syntactic characteristics have to be *interpreted* as syntactic characteristics. But, as noted above, interpretation is an intentional activity and, as such, seems to lead representationalism to a dilemma. Either there will be an infinite regress of representations and their interpreters, or representations are, ultimately, eliminable. As noted in the case of the semantic version of the homuncular fallacy, in either case there seem to be good reasons for rejecting representationalism. Thus, the attempt to avoid the dilemma posed by the semantic form of the homuncular dilemma by focusing on the syntactic character of representations seems to fail in its purpose.

The way out of either form of the homuncular dilemma is, I believe, to grasp its first horn. To this end it is useful to begin with Wittgenstein's claim in the *Philosophical Investigations* that '. . . there is a way of grasping [understanding] a rule which is not an interpretation, but which is exhibited in what we call 'obeying the rule' and 'going against it' in actual cases.'[10] This remark contrasts with his earlier view in *The Blue Book* that in any genuine instance of rule following, 'the symbol of the rule forms part of the calculation'.[11] What Wittgenstein came to see was that this view leads to a vicious infinite regress. As Merrill and Jaakko Hintikka put it, '[I]f to follow a rule is to apply a symbolic expression for it, as a formula in calculation, how do we know that we follow the symbol correctly?'[12] To say that a person correctly follows the symbolic expression of a rule only if that person's behavior involves an application of a new rule will not resolve the problem. If to follow a rule requires applying a symbolic expression for it, then following a new rule will require an application of a symbolic expression of that new rule, and the question of whether the symbolic expression is being correctly followed will recur *ad infinitum*. Thus, Wittgenstein was led to the view that there is a way of grasping (understanding) a rule in which the action of following the rule does not require an interpretation of the rule.[13] Instead, the rule is, as Wittgenstein says, 'obeyed blindly'.

In light of the remarks above, what the representationalist can say is that there is a way in which homunculi may have intentionally characterized abilities and activities attributed to them that does *not* require positing lower level homunculi with intentionally characterized abilities and activities. Just as there is a way of exhibiting the understanding of a rule in which the action of following the rule does not require an interpretation of the rule, so too a homunculus can exhibit its intentional character by responding to the stimuli that impinge on the corporate organism and producing the appropriate behavioral response *without interpreting* those stimuli.[14] Thus, if one asks what it means to attribute an intentionally characterized ability or activity to a homunculus, two answers are possible. First, the homunculus may exhibit its intentional character by responding to the stimuli that impinge on the corporate organism and producing the appropriate behavioral response without any interpretation of the stimuli. Second, the homunculus may be decomposed into a team of simpler, individually less talented and more specialized homunculi to whom intentionally characterized abilities and activities are attributed. In the first case, because no further homunculi are posited, the regress comes to an end. In the second case the regress continues and the representationalist is led to go on to account for the intentionally characterized abilities and activities of the posited lower level homunculi. The regress threatened by the second case is avoided by the recognition that the decomposition ends with homunculi described by the first case.

While Wittgenstein's remarks may be suggestive, more needs to be said about what it means to say that homunculi may, without any interpretation of the stimuli that impinge on the corporate organism, exhibit their intentionally characterized abilities and activities. Turning again to the *Philosophical Investigations*, Wittgenstein says that '. . . "obeying a rule" is a practice. And to think one is obeying a rule is not to obey a rule.'[15] As G.P. Baker and P.M.S. Hacker note, if obeying a rule was not something done within the context of a practice, then 'how we understand a rule would not be exhibited in action'.[16] Here the point is that because '[F]ollowing a rule is a human activity,'[17] and human activities derive their character from the practices in which they are embedded,[18] then any application of the concept 'following a rule' must presuppose the context of a practice.[19] If the background practice was removed, the rules embedded in the practice would lose their meaning. Thus, whether or not the exhibition of the

understanding of a rule involves interpretation, the exhibition of an understood rule is something that can only be done within the context of a practice.[20]

Returning to the case of homunculi to whom intentionally characterized abilities and activities have been attributed, suppose one grants that the intentionally characterized abilities and activities of such homunculi may be exhibited by the homunculi responding to the stimuli that impinge on the corporate organism and producing the appropriate behavioral responses without interpreting those stimuli. What Wittgenstein's remarks about rule following suggest is that the non-interpretive exhibition of intentionally characterized abilities and activities by homunculi can occur only within the context of a particular set of practices.[21] Accordingly, the representationalist is led to ask two different questions:

(1) When does a sentient creature's pattern of behavior warrant attributing intentionally characterized abilities and activities to it?
(2) Given that a sentient creature's behavior warrants attributing intentionally characterized abilities and activities to it, why explain these abilities and activities by positing teams of homunculi to whom intentionally characterized abilities and activities are attributed?

With respect to the first question, Wittgenstein's discussion of the conditions necessary for (proper) attributions of pain,[22] and his remark that a dog cannot simulate pain because 'the surroundings which are necessary for this behavior to be real simulation are missing'[23] are suggestive.[24] What they suggest is that the first question can be answered only by looking at the sentient creature's role within a particular social practice. In particular, just as 'it is only against the backdrop of some particular language-game that questions of rule following can be meaningfully asked in the first place',[25] so too the question of when the behavior of a sentient creature warrants attributing intentionally characterized abilities and activities to it can be answered only relative to the practices of a particular community in which attributions of intentionally characterized abilities and activities are made.[26] This means that no one can unilaterally understand what it means for an instance of behavior to warrant the attribution of intentionally characterized abilities and activities except by reference to the authority of securable communal assent on the matter. Relative to the first question, it follows that the pattern of behavior exhibited by a sentient creature warrants attributing intentionally characterized abilities and activities to the creature only if the behavior of the creature is such that the community making attributions of intentionally characterized abilities and activities accepts the behavior of the creature to be of such a sort that the attribution of intentionally characterized abilities and activities is warranted.[27] A sentient creature whose behaviors do not, in enough cases, accord in the relevant ways with those of the community will not be a creature to whom intentionally characterized abilities and activities will be attributed by the community.[26]

Given that within the context of most ordinary human practices it is often proper to attribute intentionally characterized abilities and activities to human beings, why explain those abilities and activities by positing teams of homunculi to whom intentionally characterized abilities and activities are attributed? This is what the second question asks. It is important to emphasize that the representationalist making use of the ideas of Wittgenstein does not attribute intentionally characterized abilities and activities to human beings because he or she has somehow found homunculi to whom intentionally characterized abilities and activities are attributed. This is backwards. Instead, because the behavior of the human being is such that, within the community of which the representationalist is a member, the behavior warrants attributing intentionally characterized abilities and activities to the human being, the representationalist explains those abilities and activities by positing teams of homunculi to whom intentionally characterized abilities and activities are attributed.

What the foregoing discussion suggests is that the representationalist's answer to the second question is that the most plausible explanations of the intentionally characterized abilities and activities of sentient creatures that capture all the common sense psychological generalizations wanted are explanations that posit teams of homunculi to whom intentionally characterized abilities and activities are attributed. Following Dennett, the idea is that teams of such homunculi are posited *in order to make as much sense as possible of* the attributions of intentionally characterized abilities and activities warranted by the community making such attributions.[29] In other words, what the representationalist is interested in are constitutive questions about intentionally characterized abilities and activities, viz., what sorts of homuncular sub-structures must be posited in order to warrant attributing the sentient creature a set of intentionally characterized abilities and activities largely coherent by the standards of the representationalist's community.[30] Notice here that the positing of homunculi is an empirical issue.[31] If it turns out that non-homuncular explanations better allow the representationalist to make sense of the intentionally characterized abilities and activities attributed to sentient creatures, then homuncularism will be abandoned.

At this point an obvious question arises. If the posited homunculi are attributed intentionally characterized abilities and activities, and if attributions of intentionally characterized abilities and activities require participation in a community in which the attributions are made, does this mean that the representationalist must talk about a community of homunculi that sanction the attribution of intentionally characterized

abilities and activities to homunculi? I hope that the answer to this is no, because the idea of a community of homunculi who make attributions of intentionally characterized abilities and activities is jejune. Instead, I believe that the representationalist can say that the community life of the human being to whom intentionally characterized abilities and activities have been attributed provides the necessary social context for attributions of intentionally characterized abilities and activities to the posited homunculi.[32] Recall that homunculi are posited in order to provide explanations that make as much sense as possible of the personal level intentionally characterized abilities and activities attributed to human beings by the community making such attributions. Thus, the representationalist starts out with personal level attributions of intentionally characterized abilities and activities, and then attributes to posited homunculi only those intentionally characterized abilities and activities necessary to explain the personal level intentionally characterized abilities and activities. In effect, the representationalist is saying that the intentionality of the intentionally characterized abilities and activities attributed to posited homunculi is derivative; it is derivative of personal level attributions of intentionally characterized abilities and activities that the homunculi are posited to explain. As a result, it is not necessary for the representationalist to talk about a community of homunculi that sanction the attribution of intentionally characterized abilities and activities to homunculi.

Let me now try to bring some of the strands of my account together. What I've suggested is that intentional characterizations are always relative to a community in which intentional attributions are made.[33] Attributions of intentionally characterized abilities and activities require a social context for them to make any sense at all. What personal level intentionally characterized abilities and activities are attributed will be constrained by the representationalist's goal: to make as much sense as possible, *within the community-relative intentional realm*, of the behavior of sentient creatures. Once personal level intentionally characterized abilities and activities have been attributed to the sentient creature, the representationalist next asks the question: Does it help in making as much sense as possible of the intentional behavior of the sentient creature to posit homunculi, to whom intentionally characterized abilities and activities are attributed? If so, then the representationalist will posit homunculi. As was the case for personal level attributions of intentionally characterized abilities and activities, what intentionally characterized abilities and activities are attributed to the posited homunculi will be constrained by the representationalist's goal of making as much sense as possible, relative to his or her community, of the sentient creature's intentional behavior.

But now, what of the intentionally characterized abilities and activities of the posited homunculi? Here the representationalist must ask whether

decomposing these homunculi into teams of simpler, posited homunculi to whom intentionally characterized abilities and activities are attributed will help in making sense, within the community-relative intentional realm, of the sentient creature's intentional behavior? If the answer is yes, then the homunculi ought to be decomposed into teams of sub-homunculi to whom intentionally characterized abilities and activities have been attributed. If the answer is no, then the homunculi ought not be decomposed. In the latter case the intentionalist psychological justifications for positing still further representations and their attendant homunculi have been exhausted.[34] The regress has reached the stage where, rather than continuing the decom-positional analysis, the representationalist may say that this is how the person was 'trained' to behave. Accordingly, the homunculi at this level may be said to exhibit their intentional characteristics by responding to the stimuli that impinge on the corporate organism and producing the appropriate behavioral response without any interpretation of the stimuli. At each stage, the question of whether decomposition ought to occur is, I believe, an empirical one.

Here, I believe, two questions naturally suggest themselves. First, whether the decomposition stops at the first level, or some later level, isn't it the case that, because the posited homunculi have intentionally characterized abilities and activities, the decomposition must go on? Second, if the decomposition stops, doesn't the homuncular theory turn out to be a question-begging theory? The answer to the first question has, I believe, already been given. Even though intentionally characterized abilities and activities are attributed to the posited homunculi, this does not require additional decomposition. This is the moral of recognizing that not all instances of understanding (grasping; following) a rule require interpretation.[35] The decomposition stops when 'an ungrounded way of acting'[36] has been reached. Although the behavior at this stage is intentional, it is trained behavior, not behavior that results from an act of interpretation. The idea is *not* that the stimuli cannot be further interpreted, but that the organism does no interpretation.[37] What has been reached is a 'psychological, not a logical terminus'.[38] It is in this sense that the homunculi may be said to exhibit their intentionally characterized abilities and activities without any interpretation of the stimuli that impinge on the corporate organism.

What then of the second objection, that the homuncular theory is question begging? This objection depends upon the supposition that any non-question begging explanation of an intentionally characterized ability or activity must be one that explains the intentional *in terms of* the non-intentional. However, this supposition conflates at least three different kinds of explanation[39]:

(a) Explanations of high-level intentionally characterized abilities and activities in terms of lower-level, intentionally characterized

abilities and activities.

(b) Explanations of intentionally characterized abilities and activities in terms of non-intentionally characterized abilities and activities.

(c) Explanations of high-level non-intentionally characterized abilities and activities in terms of lower-level, non-intentionally characterized abilities and activities.

It is true that if one recognizes *only* explanations of the form (b) or (c), then explanations of form (a) are question begging. Put differently, if one assumes that the only way that intentionally characterized abilities and activities could be genuinely explanatory is in virtue of the absorbability of intentional psychology into some non-intentional science, then representationalist explanations of the sort I have proposed are *not* genuinely explanatory. However, this is where to draw another moral from the writings of Wittgenstein.[40] The goal of intentional psychology is to make as much sense as possible of attributions of intentionally characterized abilities and activities relative to the community making such attributions.[41] The goal of intentional psychology is *not* to offer explanations of non-intentionally characterized abilities and activities. Just as Idealist and Realist characterizations are characterizations within different language games,[42] so too what we have here are two different language games; one language game concerned with non-intentionally characterized abilities and activities, and another language game concerned with intentionally characterized abilities and activities. Because the representationalist is offering explanations *within the intentional realm*, explanations of form (a) are not question begging. To suppose otherwise is tantamount to saying that explanations of form (c) are question begging because they explain high-level non-intentionally characterized abilities and activities in terms of low-level non-intentionally characterized abilities and activities. But this seems to be the wrong conclusion to draw. Rather, we should say that as long as the explanations are explanations of non-intentionally characterized abilities and activities, then explanations of form (c) are perfectly appropriate, and *mutatis mutandis*, that explanations of form (a) are also perfectly appropriate. Thus, in recognizing that the language games of intentional psychology and of non-intentional sciences are different, we may say that the claim that explanations of form (a) are question begging ought to be resisted.[43]

So, finally, what can be said about representationalist psychological explanations? A couple things, I believe. First, the sort of explanations that my version of representationalism makes use of need not be causal explanations. This does not mean that actions have no causes; I believe that they do. Neither does this mean that we do not make reference to intentionally characterized abilities and activities in the explanation of actions. However, just because reference is made to intentionally characterized abilities and activities in the explanation of actions, it does not follow that intentionally characterized abilities and activities explain those actions because they are the causes of them. Psychological explanations explain by allowing the inquirer to make as much sense as possible, relative to the conceptual framework of the inquirer, of the intentionally characterized abilities and activities of the subject studied. Does this mean that psychological explanations will never be causal explanations? The answer to this question may not, I believe, be 'no'. Because psychological explanations depend upon a specification of the interests of community making the explanations, then it is *possible* (though not necessary) that some psychological explanations will be causal. Which psychological explanations may turn out to be causal? I believe that the answer to this question will depend upon an empirically discovered answer to the question: Are there psychological predicates that pick out natural kinds? If there are such predicates, then at least *some* part of common-sense psychology can be absorbed into a mature science and the psychological explanations belonging to this part of common-sense psychology will be causal. In contrast, if there are no such predicates,[44] then no part of common-sense psychology can be absorbed into a mature science and no psychological explanations will be causal.[45] In either case, what is important is that common-sense (intentional) psychology and scientific psychology are *not* in competition with each other.[46] By recognizing the context dependence of psychological explanations, representationalism may recognize the value of non-question-begging psychological explanations that are not causal explanations, and are neither eliminable in favor of nor reducible to non-intentional explanations. If this is correct, then Searle's homuncular dilemma has been undercut by grasping its first horn.

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Notes and References

1. Dennett, 1981, p. 119.
2. Ibid., p. 119
3. Searle, p. 28.
4. Dennett, 1981, p. 122.

5. See Searle, p. 28.
6. Searle, p. 29.
7. See, for example, Fodor, 226ff.
8. Searle, p. 26. Searle also says that '"syntax" is not the name of a physical feature, like mass or gravity' (Searle, p. 27), that 'syntax is essentially an observer relative notion.' (Searle, p. 27), and that both '[S]yntax and symbols are observer relative.' (Searle, p. 35).
9. Searle, p. 29.
10. Wittgenstein, 1979 p. 202.
11. Wittgenstein, 1969a, p. 13.
12. Hintikka and Hintikka, p. 188.
13. See Wittgenstein, 1978, p. 47, and Lewis, p. 285.
14. See Wittgenstein, 1972, p. 110, and Wittgenstein, 1979, pp. 217, 506.
15. Wittgenstein, 1979, p. 202.
16. Baker and Hacker, p. 124. Also see Wittgenstein, 1979, pp. 180, 224, 323.
17. Wittgenstein, 1978, VI, p. 29.
18. Wittgenstein, 1972, p. 2.
19. See Wittgenstein, 1978, IV, pp. 21, 27, 33.
20. Wittgenstein, 1969b, p. 229.
21. See Wittgenstein, 1979, pp. 250, 580, and Phillips, pp. 34ff.
22. Ibid., p. 281ff.
23. Ibid., 1979, p. 259.
24. Also see Wittgenstein, 1970, pp. 128–130, and again at p. 534 where he says that 'only surrounded by certain normal manifestations of life, is there such a thing as an expression of pain.'
25. Hintikka and Hintikka, p. 189.
26. Cf. Wittgenstein, 1980, p. 23, where Wittgenstein says:
    'Human beings think, grasshoppers don't.' This means something like: the concept 'thinking' refers to human life, not to that of grasshoppers.
27. Wittgenstein, 1969b, pp. 140, 281, 610. Also see Wittgenstein, 1970, pp. 534, 567, Wittgenstein, 1978, VI, pp. 20–21, 32, 34, Caraway, pp. 311–312, Chandra, pp. 281ff, Dilman, pp. 162ff, Lovibond, pp. 54ff, and Margolis, p. 564. In contrast see Budd, pp. 318ff, Davies, p. 56 and McGinn, chapter 1.
28. See Gier, p. 61, Kripke, chapter 3 and Lovibond, p. 51. In contrast see Budd, pp. 318ff.
29. Dennett, 1989, p. 91. Also see Stroud, p. 339.
30. This obviously has close connections with Davidson's principle of charity. See Davidson, 1984, pp. 137ff, 168ff.
31. See Rorty, pp. 162–163.
32. Wittgenstein, 1979, II, p. 178.
33. Ibid., pp. 482, 483.
34. Ibid., p. 217.
35. Ibid., p. 201.
36. Wittgenstein, 1972, p. 110.
37. Wittgenstein, 1970, p. 234.
38. Ibid., p. 231.
39. Rorty, p. 163, seems to conflate explanations of type (a) and (b).
40. See, for example, Wittgenstein, 1970, p. 645ff, Wittgenstein, 1979, pp. 179–180, and Hallett, pp. 625–629.
41. And, perhaps, to offer explanations of type (b), should they be forthcoming.
42. Wittgenstein, 1979, p. 402.
43. See Wittgenstein, 1972, pp. 20ff where a similar point is made concerning the relation between aesthetic and physiological (or, more broadly, physical) expla-

nations. It is worth noting that such a conclusion is consistent with there *also* being explanations of type (b).

44. As suggested by Wittgenstein, 1970, p. 608ff. Also see Wittgenstein, 1979, p. 180e. Whether there exist psychological predicates that pick out natural kinds is, I believe, presently unknown. In this connection see Graham and Horgan, pp. 73ff.
45. See Davidson, 1982, pp. 207–27, 229–39, and 245–59.
46. See Wittgenstein, 1979, p. 402, Wittgenstein, 1969a, pp. 57–9, and Hallett, p. 625.

On the Relation of Mathematical Objects to Time: Are Mathematical Objects Timeless, Overtemporal or Omnitemporal?

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It is a widespread view that mathematical objects are not created or destroyed as are sensible things. In connection with this we often find the belief that they are not bound to the rules of the time, that they are timeless. This leads to the claim that mathematical propositions are valid for all times. This surprising conviction demands a justification. Moreover, there are good reasons for not even trying to give a justification for the eternal validity of mathematical propositions. One may be afraid that this might only be possible by the means of metaphysical presuppositions. But even then one must accept the claim of the eternal validity. In this article I am going to present some philosophical attempts to understand this special relation of mathematical objects to time. Plato, Leibniz, Kant, the mathematical intuitionists, and Husserl should lead us at least to the 'correct questions'. I will investigate in which way mathematical objects are 'in' time, or in which way they have a connection to time and in which way they do not.

This investigation is not starting from the contrast between 'Platonism' and 'intuitionism' (or 'constructivism'), although this is a widespread and accepted pattern of argumentation in the philosophy of mathematics. This pattern of questioning asks every philosophical or methodological theory whether it will accept that mathematical objects have 'always been there' or not. If they have, they must have been *discovered*, otherwise they must have been *created*. Whether or not a theory would accept indirect proofs of existence also depends upon the answer to that question.[1]
This more or less methodological alternative starts with a ontological concept of existence and thus is not appropriate to a transcendental theory which tries to grasp the relation of mathematical objects to time. A transcendental theory tries to understand *how* it is possible and justified to think that mathematical objects are either 'created' or 'discovered'. The methodological alternative however demands only an unambiguous answer to the question: created or discovered? Such a pattern of questioning leads to a simple method of decision (Schubladenverfahren). Thus it often appears as if the debate over methodological questions is carried on by other ('philosophical') means. But philosophy is not to be used as a

vicarious battlefield for methodological quarrels.[2]

In Plato, mathematical objects belong to the realm of unchangeable ideas. The changing sensibilia are only imperfect images of them. They do not have to follow the law of generation and decline. Thus their unchangeability and eternal validity are assured. Only the access of the recognizing subject to this realm remains a problem. Perceptible things seem to offer no suitable way of access. In his *Meno* (81–86) Plato lays out his doctrine of knowledge as the recollection of the ideas by the reincarnated soul. The soul is able to view the ideas in the periods in which it is not incarnated. Plato's proof of the immortality and reincarnation of the soul is the extraction of the solution to a mathematical problem from an uneducated slave by questioning alone. Thus the soul must be immortal and it must have access to the eternal ideas before its incarnation. In geometry and arithmetic the human subject only discovers what has always been (*Euthymedos* 290 BC)—Plato's justification of the timelessness of mathematical ideas is rich in ontological presuppositions and has subsequently provoked numerous disagreements.

Leibniz draws a distinction between the *eternal truth* of logic and mathematics, and *facts*. The contrary of facts can be true without leading to a contradiction. To assume the contrary of an eternal truth however leads to a contradiction. For Leibniz the whole of mathematics consists in a series of consequences drawn out of a few basic definitions by the law of contradiction.[3] Even the fundamental axioms, which in the ancient view are self-evident, are by careful analysis revealed as a consequence of the principle of excluded middle. Thus Leibniz proves in his *New essays*... the equation 2+2=4 (Book 4, chapter 7, section 10) only by drawing conclusions from the definitions of the numbers.

Kant denies the possibility of drawing a conclusion like 5+7=12 solely out of the law of contradiction, i.e. analytically. All mathematical propositions are synthetic and a priori (B 14). Thus mathematics presents a first and therefore important evidence of the possibility of synthetic-a priori judgments. Kant's argument against Leibniz (B 15 ff.) rests on the difference between that 'which we should add to a given concept' and that 'which we really think in it' though only obscurely. The recursive definition of numbers, for example 5=4+1, 4=3+1, etc., contains something which we 'should think in it'. The successive addition of five units in intuition is what we 'really' think of in the concept of the number 5. In the concept of the addition of 5 and 7, there is the concept of a number. But by only analyzing the concepts of 5 and 7 we are not able to determine which number. To know this, we have to exceed our concepts and take intuition into account, for example, the intuition of the addition of five fingers or five points. By adding intuitively 7 units to the already given 5 units, I can have an intuition of how the number 12 arises. In the same way I can grasp a geometrical insight only by constructing it in pure intuition.

Nevertheless Kant stays with the axiomatic ideal of Euclidean geometry.

That means: most of the conclusions in mathematics follow from axioms by the principle of contradiction. Using the principle of contradiction, however, we can only achieve a synthetic judgment 'if another synthetic judgment is presupposed' (B 14). Kant understands the immediate evidence of arithmetic and geometric axioms as their construction in pure intuition. Synthetic principles of arithmetic are, for example, equations like 5+7=12.

Conclusions from the axioms have apodictic certainty (B 14). The principles of pure understanding (Grundsätze) are synthetic-a priori and also apodictical, because their source is pure ('non-empirical') intuition. The few analytical principles which have to be presupposed by geometry (for example a=a, B 17) are also necessarily valid. Therefore the modality of all mathematical propositions is necessity, and according to the schema of this category they are thus valid at all times.

On the other hand, mathematical insights must—as they are synthetical—be shown to be valid in a special act of construction in the medium of the pure intuition of space or time. Kant's argument for the essential role of intuition in mathematics is that the non-contradiction of a combination of ideas (concepts) does not imply the existence of a real intuitively given thing which corresponds to the concept. Non-contradiction of a concept is a necessary, but not a sufficient, condition for the existence of corresponding objects ('objective reality'), since it does not show up a means to construct the concept in intuition (A 220 f./B 267 f.). The concept of a plane figure which is enclosed by two straight lines does not entail a contradiction, but nevertheless, we cannot construct such an object in intuition. Thus (pure) intuition in mathematics has the same negative role of critically limiting our claims of knowledge in respect of possible intuitive experience as it does in the transcendental dialectic (A 711/B 739). This basic attitude towards the limited performance of non-contradiction and the undeniable requirement of intuition in mathematics, shows the justification of the intuitionist's claim of Kant as a philosophical precursor.[4]

With his starting point in the act of construction of mathematical concepts in pure intuition, Kant has to take up an event within the ('non-pure') time of empirical events. This seems to be problematic even if the medium of the construction is pure intuition of time (or space). By being an individual event in 'empirical' time, the act of construction threatens the claim of universal validity of mathematical propositions. Kant saw this problem. His solution makes a virtue of the necessary individuality of these acts of construction: In mathematics we consider 'the universal in the particular' (A 714/B 742 or 'the universal *in concreto*' A 735/B 763). The construction of concepts is a method of giving, a priori, the intuition corresponding to a pure concept (A 713/B 741). But even an act of construction in the medium of pure intuition remains particular. It 'must as an intuition, be a single object' (A 713/B 741).[5]

Thus we have to ask how the characteristics which we discover in a single construction can also be valid for all other intuitions of this mathematical concept. I can construct a triangle in pure intuition by means of pure imagination. In more complex constructions I have to use a sketchy drawing on paper which nevertheless has to obey the directives of the pure productive imagination. The single drawn figure is an empirical object. It only has the function of representing the concept in its universality. What we are doing in geometrical construction is focusing our attention on the schema of the concept abstracted from its concrete qualities, for example, from the size of the sides and angles. The schema remains in a pre-individual, pre-image, function, regulating our acts of construction. In this way the universality of the concept is preserved. As Kant formulated it, the schema is a 'universal procedure of imagination, in providing an image for a concept' (A 140/B 180). Thus geometrical propositions are concerned with the concept in its function as schema, that is, the universal, that which remains the same in every individual construction.[6]

The universality of the mathematical judgment is preserved by not limiting the universality of the schema. The construction is done in a way that the lines can 'be drawn greater or smaller' and thus we can also let the sides come together in every possible angle (A 164 f./B 205 f.). This characteristic of geometrical construction also becomes obvious if I look upon the universal formulation of the rule for constructing a triangle: Out of three lines, of which two together are greater than the third, we can form a triangle. In this way I am not limited to a concrete triangle. For using only the schema of this pure geometrical concept I can choose the size of the sides and the angles freely. The schema as a 'Universal procedure', enables a construction which abstracts from every concrete dimension and is thus universally valid (A 714/B 742).

From a Husserlian perspective this procedure is a modification of the method of *eidetic variation*. The universality of a judgment can only be achieved by arbitrary variation, by multiple imaginative acts. In going through this manifold of variation the characteristics which remain identical are evident. This means that Kant is only able to avoid the difficulties presented by the individuality of acts of construction by surreptitiously thinking a (unlimited) multiplicity of acts of construction in the one act. The universality of the judgment is only to be reached by imaginatively taking into account all possible variations, i.e. special cases.

There is another point in Kant's concept of mathematical knowledge where the indispensable individuality of the constructing act presents an obstacle. Judgments of numerical equations (5+7=12) are synthetic-a priori but not universal. They judge only determined numbers and therefore they cannot be axioms in the sense of universal mathematical basic principles (Grundsätze) (A 164/B 204 f.). The judgment 5+7=12 is synthetic, but it remains an individual judgment. This is not only a characteristic of the quantity of the judgment, but it also refers to the

individuality of the act of construction. It is, as mentioned above, 'as an intuition . . . a single object'. The special difficulty with number-equations is that the representation in pure intuition (Darstellung), i.e. the act of construction, 'is possible only in one way' (A 165/B 205)—in contrast to a geometrical proof. The method of construction in arithmetics consists in a synthesis of homogeneous elements (Synthesis des Gleichartigen) in the pure intuition of time (B 15). By this Kant means the successive collection of units, which we can, for example, also perform with our fingers or single points in empirical intuition. By taking them 'one by one' and then taking 7 of them together with the units already collected for the representation of the number 5, the number 12 is generated. The synthesis of assembled units in intuition, which are thought in a single number or addition of numbers, is therefore only possible in one way (A 164 f./B 205 f.).

The only way out of these difficulties seems to be offered by algebra. Judgments which use only algebraic variables have the same universality as the judgments of geometry. Kant tries to convince us that in algebra there is (in analogy to geometry) a 'symbolic construction' (cf. A 717/B 745 also for the following argument). Algebra abstracts by use of variables from determined quantities, and constructs only with 'pure quantities'. In the use of quantity-in-general in algebraic variables Kant sees the use of the 'magnitude as such' (universal concept of quantity). The constructions (operations) with numbers, which can create or change certain quantities (such as addition, multiplication etc.) are represented in intuition following certain universal laws. For example in division the algebraic variables are surrogates for the numbers and are combined following the characteristic form of division, for example, as a fraction. The result is then worked out with a 'symbolic construction' (or, recalling of Leibniz, a 'characteristic construction', A 734/B 762, 'charakteristische Konstruktion')[7] which performs analogously for the relations of quantities-in-general the same function as geometrical construction. As in geometry, in algebra intuition extends our knowledge. It is the intuition of the signs (for operations and quantities-in-general), in its rule-guided spatial arrangement, that extends our knowledge further than the realm which we can recognize by discursive use of our mind (A 717–725/B 745–754).[8]

In his optimism concerning the extension of our knowledge by intuition, Kant disregards that algebra is using operation-rules which are achieved through formalisation and universalisation of single number-equations. For example, we arrive at the universal law of associative addition a+b=b+a from the starting point of single equations like 5+7=7+5, 2+3=3+2, etc. Here too the knowledge of the universal law requires an unlimited variation to cover all possible cases. In the synopsis of this multiplicity the universal law reveals itself.

Kant's solution of a 'characteristic construction' seems to rest on the properties of sensually given mathematical signs (as real objects). But

their properties (properties of the signifying) are only to be thought as analogous with the properties of the signified under the speculative assumption of a successful *caracteristica universalis* in the Leibnizian sense.[9] Only a strict analogy between the qualities of operation-signs and the characteristics of the operations themselves, would allow a transition from certain perceptual configurations of signs to an analogous relation of the signified. The method of 'characteristic construction'—and not only its designation—reveals its Leibnizian presuppositions.

Later on, we will find the idea of a perceptible analogy of a mathematical state of affairs with the spatial coordination of operation-signs in intuitionism and also in Hilbert's metamathematics. Hilbert based the intuitiveness of the contentual metamathematics on the perceptible relation and coordination (or arrangement) between perceptible signs and therefore it proves its propositions analogously.[10]

Intuitionism explicitly takes up Kant's idea of a constructing act as the basis of all intuition in mathematics. For Brouwer, the basic intuition of mathematics is 'Two-oneness' which enables the construction of proper numbers. The whole of mathematics and even geometry arises out of constructions in the medium of time.[11] Like Kant, intuitionism does not accept non-contradiction as a sufficient justification of existence. Therefore, indirect proofs in infinite sets are rejected. Thus even the principle of double negation is not valid without limitation.

The strong upgrading of time as the single medium of construction is accompanied by a strong and conscious emphasis on the individuality of the constructing act, the finitude (Endlichkeit) of the constructing subject, and the individuality of the constructed entity. With the intuitionist return to the linkage between mathematical objects and the subject of construction, there arises a thesis which precisely contradicts the belief in the atemporality of mathematics. The dependence on the factual acts of the mathematician becomes obvious in the requirement that for existence to be proved one has not only to show in principal the possibility of an effective construction but factually to work it out (effective construction).[12] The final consequence of this is that the results of mathematical investigations are individualised by the date of their discovery, they are valid only from the date of their effective proof on.[13]

In contrast to this consequence of the basic methodological approach, intuitionism does not deny the unique relation of mathematical entities to time. A. Heyting writes '... even intuitionists are convinced that in some sense mathematics bears upon eternal truths'. Thus, only the concern that an argument for this might solely be possible through metaphysical presuppositions hinders intuitionism.[14] The eternity or atemporality 'conflicts' with the connection of mathematical entities to their constitution (by mathematical constructions) in the subject and thus causes a dilemma: In a Platonist interpretation the atemporality of mathematical entities is founded on an ontological presupposition. But therein is no place left for

the necessary connection to the constructing subject and the time in which this construction takes place. On the other hand in intuitionism the link to a mundane subject and his construction is so strongly in the centre of the conception that over-, omni- or atemporality remains enigmatic.

In his own attempts to clarify the nature of mathematical knowledge, Husserl arrives at a similar difficulty. After a first approach to the identity of meaning in the *Logical Investigations*—which he later on recognizes as inadequate—he will find a solution for this dilemma which does not rest on ontological presuppositions, and seems to me to be quite adequate to the problem of the relation of mathematical objects to time.

In the first *Logical Investigation* Husserl tries to understand the identity of meaning (Bedeutung) as an identity of species. The ground of the identity of meaning is the identity of the essence of the meaning-bestowing acts ('das bedeutungsmäßige Wesen der bedeutunggebenden Akte', Hua XIX/1, 104–110, 431–435). With this approach he tries to understand the identity of the meaning of different expressions and of the same expression on different occasions. But this way to characterize meaning by a dependent moment (Moment) of the meaning-bestowing act seems to Husserl (already in his *Ideas*..., 1913) to be one-sidedly 'noetical', i.e. it concentrates too much on the constituting act (Hua III/1, 217; 296, Anm.1, 298). Husserl did not abandon this first concept, but he appends it with the 'noematic' concept of meaning which is more oriented to the content constituted by the meaning-bestowing act. Now the thematic identity of meanings manifests itself in the possibility of synthesis of identity concerning the intended content. As already inaugurated in the analyses of the sixth. *Logical Investigation*, this means that the elements of the respective object-sense (gegenständlicher Sinn) can be identified in a categorial act by the means of a total coincidence (totale Deckung)—independently of their fulfilment (Hua XXVI, 182–188). Later on in Husserl's philosophical development we find an explicit criticism of his first attempt at the identity of meaning by species.[15]

One consequence of this first attempt to understand the identity of meaning is that the meaning of an expression in different contexts has the same relation to the *one* meaning as different red objects to the species red (or as concrete tables to the idea of a table). Thus the number four is a species, an objectification of a universal (Hua XIX/1, 115 f., 144 f.)—the whole conception seems to be Platonic. Husserl further facilitates this misunderstanding by choosing the designation, *intuition of essence* ('Wesensschau'), for the complex act of intuiting a concept (or universal, Allgemeingegenstand) (Hua XIX/1, 13 ff.).[16]

The intuition of essence (ideative abstraction, 'ideierende Abstraktion') and, universals is founded in perceptional or imaginative acts which are directed at individual objects.[17] We can only achieve an intuition of the species 'red' through the imaginative variation of individual red things. In the process of running through this variation (manifold) there occurs a

partial synthesis of coincidence of a certain style which is directed to the respective moment of colour. In the 'ideative abstraction' this synthesis of coincidence is appercepted as a representative function (Repräsentant) of the species red which is thus intuitively given. Only through the mediation of the series of perceptions (and imaginations) of single objects can the universal be given as an object.

When we consider the style of the 'ideative abstraction' carefully, the shortcomings of this first attempt are revealed. In intuiting a species, the style of the synthesis of coincidence between partial intentions reveals a great degree of coincidence but also a certain periphery of diversity. This periphery corresponds to the difference and the individuality of the perceptively given red things.[18]

If we follow this model, then the occurrence of an expression with a certain meaning implies an individuation of the meaning. By the individuation of the meaning acts in objective time the meaning itself is individualised and thus becomes a singular individual. Only the ideative abstraction can invert the individualising changes and give us insight into the identity of meaning. But if we consider carefully the meaning of different judgments judging '3+2=5', we can only detect total coincidence of meaning and no differences. The only possibility left for claiming differences is the localization of acts in time. We have to then take this as the basis for the inference: The individuation by the fixed point in time of the meaning act leads to an individuation of the meaning.[19] In this way Husserl's first solution to the problem of identity in the realm of meanings leads to a similar difficulty with mathematical objects as in intuitionism. The unavoidable access of the recognizing subject seems to individualize the recognized objects.

But around 1918, it appears to Husserl that the difference between the *real objects* which are individualised in space and time and the categorial, *objects of understanding* ('Verstandesgegenstände') is best understood as a difference between their respective time-characters. These results are published first in *Experience and Judgment* (1938). Isolated hints to this solution are to be found in *Formal and Transcendental Logic* (1929).[20]

Husserl distinguishes between the *givenness-time* (Gegebenheitszeit) and the *essential time* (Wesenszeit) of an object in order to grasp the difference between real and irreal objects (EU, 303–309, *253–258*). The time of givenness is, for all objects of consciousness, the immanent time of the flow of consciousness (Hua VI, 175; EU, 305, *254*). On the content which is given in immanent time can be founded acts whose objects have another form of time. In the flow of originary present (urpräsente) contents there can occur syntheses of coincidence between protentional, actual fulfilled, and retentional fading contents. Objects appear as something which does not flow itself, but which has a duration in objective time. The real objects of nature have duration in the objective time, in contrast to the phases of inner time consciousness itself. Real objects of nature have a duration in

the objective time, in contrast to the phases of inner time consciousness itself. Real objects are the same throughout different perceptions. Their essential time is the objective time. Each further perception does not give us a new object, but the same one. Their givenness-time is, as for every object, the time of inner time consciousness. Real objects 'survive' the 'pauses' in the objective time of the perception. But they are also subject to the universal laws of this form of time, i.e. they can come into being, change, and vanish. Their respective place in time belongs to the real object.

In opposition to this, mathematical objects are irreal objects of understanding and their essential time is of a higher order. They are *omni-temporal*, i.e. they are the same (unchanged), in every occurrence in the acts of a recognizing subject. Of course they are constituted—as are real objects—in the flow of the consciousness of inner time. But they are not individualized by their occurrence in objective time. Due to this occurrence in categorial acts (which have an objective duration) they receive a relation to time, but they are not bound as an individual to a fixed place in objective time (EU, 304, *254*, 309–313, *258–262*; Hua XVII, 162 f.).[21] Perceptions of real objects, signitive intentions, and synthesis of coincidence, found acts of categorial intuition (which occur in objective time). These syntheses of coincidence occur in the performance of articulated syntheses of intentions simpliciter (schlichte Intentionen). The objects constituted (objects of understanding) have a higher order form of time, i.e. they are *omni-temporal*.[22]

Husserl's argument for this difference in the time-character of real and irreal objects rests on the model of apperception and appercepted contents.[23] The form of time which belongs to the founding objects has no 'representative function for the higher-order objects', that is, it has no representative function in the apprehension of the higher-order objects (EU, 310, *258*). In this way objective time (as the form of the real objects that found higher-order objects, the signs, and the founding acts) does not 'enter' into the higher-order objects. An object of understanding can occur identically at different places in time. But this objective point of occurrence and the duration of the judgment gives it only *inessential relation to time* which does not imply individuation (Hua XVII, 162 f., 166 f., 171; EU, 309–313, *258–261*).

The *relation to time* of mathematical objects (as well as the objects of understanding in general) reveals itself as 'a mode of temporality', their place 'over all time' means *omni-temporality*, and thus remains a mode of time (UE, 313, *261*). Their unavoidable occurrence in the acts of the recognizing subject implies a necessary relation of mathematical objects to time.

Against the background of these differences in the form of time of mathematical objects we can now understand the differences in the style of the syntheses of identity in real and irreal objects. To use a broad

analogy: Real objects 'endure through' the period of time when they are not given to me, objects of understanding 'jump over' these periods and thus have no objective duration. Objects of understanding do not 'lie' in the objective time 'between' the points of their occurrence. On the contrary, individual real objects have to 'lie' and 'endure' through the time in between their occurrences. Otherwise we could not think of them as being the same throughout the slight changes they may suffer. The fixed place and its duration in time belong to an individual object. Concerning the irreal objects of understanding only the process of judgment (das Urteilen) is an individual as an event in objective time. The contents of the judgment is not an individual (EU, 309, *258*). The meaning of a judgment is the same in different occurrences.

The omni-temporal identity of an object of understanding (judgment, set, number, etc.) is not an identity of species. Thus Husserl criticises his own first attempt to solve the problem of the identity of meaning. An irreal object like '2 < 3' is 'identical as the correlate of an identification and not a general (universal) as the correlate of a comparative coincidence' (EU, 316, *263*). The identification of objects of understanding rests on the possibility of total coincidence with their respective meanings. In these meanings there are no individual moments (abstract parts) which could only be identified by means of an eidetic variation as single instances of the same species (EU, 314 f., *262*). The claim of the omnitemporal identity of objects of understanding is not connected with the idea of a separate realm of being in which these objects exist. Husserl thought such a 'metaphysical hypostasis' to be abandoned long ago and often, he does not even find it worth mentioning (Hua XIX/1, 127 f.).

The omnitemporal identity of the meaning of objects of understanding does not imply their omnitemporal validity. A proposition like 'The train is the fastest means of travel' has lost its validity in the age of planes, but it has not changed its meaning, otherwise we could not even recognize that it is now false (EU, 313 f., *261*, Hua X, 97). Yet even omnitemporal validity is not excluded by the unavoidable connection of objects of understanding to time. Judgments which do not judge individual objects or which allow reference to individuals in formal universality are valid for all times. This is true for the propositions of formal logic and mathematics. Thus we discover mathematical propositions at an individual point in time but they bear in their sense the claim that they had been valid before (EU, 312, *260*).

The style of the corresponding syntheses of identity reveals their omnitemporal identity. But as they have no connection with real objects in objective time, we come to see their omnitemporal validity. Each real or possible subject of the necessary syntheses has to perform those syntheses *at any time* in the same way. To denote the difference in validity Husserl distinguishes between *free idealities* in logic and mathematics and *bound idealities* which in their intention refer to real things in objective time

(EU, 321, *267*, 312, *260*). The validity of propositions on real objects is limited to a certain period of time. The free idealities are not bound to a period of time in this way. They are valid for ever and for every subject.

The objects connected in the judgment are conceived in formal universality or are conceptualised in systems of axioms independent of real being. Thus the deduction must lead 'at all times' to the same result. By these means the objects of understanding can be taken out 'of the objective connection in time'. Omnitemporal validity of mathematical propositions is a consequence of omnitemporal identity in cooperation with a certain 'loosening' of the connection between objects and objective time. Thus we do not need to rely on metaphysical or ontological presuppositions to speak of an omnitemporal validity of mathematical proposition.

Through the remodelling of mathematics into an entire formal-axiomatic discipline, the contradiction, between the singularity of mathematical construction (for example in geometry) and the justified claim of universality, that previously seemed insolvable, is annuled. Kant tried to solve this contradiction by claiming that in mathematics universality is recognized in singularity. But the step from a series of single number equations (5+7=7+5, 2+3=3+2, etc.) to a universal law demands an eidetic variation which runs through a multiplicity of different equations and grasps the identical moment of form within them: a+b=b+a (we found the same method in geometry). But it is apparent that this whole way of posing the problem, and its solution, still belongs to the state of theoretical development that is in transition from concrete mathematical disciplines to equi-structured, formalized disciplines. In its last version (in *Formal and Transcendental Logic*, 1929), Husserl's philosophy of mathematics tries to treat this movement within mathematical science appropriately. He conceives formal mathematics as part of the one universal formal ontology of the 'object as such' ('Gegenstand-überhaupt').[24] Consequently, as a discipline which tries to be aware of its formal character, it does not presuppose the existence of any real object. The validity of its propositions is independent of the fact that there is something real or not. If we already start in formal universality it is no longer enigmatic how we are able to recognize something universal.

Notes and References

1. Cf. for this methodological alternative, O. Becker, *Mathematische Existenz*, in: Jahrbuch für Philosophie und phänomenologische Forschung, Bd. VIII, 1927, Nachdruck Tübingen, 1973; O. Becker, *Größe und Grenze der mathematischen Denkweise*, Freiburg, 1959; R. Schmit, *Husserls Philosophie der Mathematik. Platonistische und konstruktivistische Momente in Husserls Mathematikbegriff*. Bonn, 1981; Kap. 7 und J. Klüver, *Operationalismus*, Stuttgart, 1971. I will give references to the work of Plato with the Stephanus-pagination, to Kant's *Critique of Pure Reason* (following the translation of N. Kemp-Smith, sometimes with slight changes) with the pages of the first (A) and

second (B) edition. Husserl's works are cited following the Husserliana edition (Hua Vol, page). I will refer to *Experience and Judgment* in the German Edition, Hamburg 1964 and to the translation of K. Ameriks/J.S. Churchill (sometimes with slight changes) using the key (EU, Seite (=German), *page* (=translation)).

I would like to mention gratefully the help of Paul Crow on the English text, and the friendly but critical discussions on earlier versions of this paper at a lecture in the 'Centrum voor logica', Katholieke Universiteit Leuven. An earlier version of this paper is to be found in the French journal *Alter* (1993). I have also to thank the Alexander von Humboldt-Stiftung, which I owe a research fellowship during 1991–1993, and the kind support by Prof. Dr C. Steel, Prof. Dr R. Bernet und Prof. Dr S. I. Jsseling from the Husserl-Archieves Leuven.

2. In mathematics itself the methodological quarrel has changed into an unbiased matter-of-fact affair. Cf. S.C. Kleene, *Introduction into Metamathematics,* Amster-dam-Groningen 1952, who simply indicates the propositions and the proof-procedures which are not accepted by intuitionism.
3. The difference between eternal truth and factual truth is to be found in G.W. Leibniz, *Neue Abhandlungen über den menschlichen Verstand,* Hamburg, 1971, 4. Book, chapter 2, section 1 und 4. Book, chapter 9, section 14. On the character of arithmetics and geometry cf. 4. Book, chapter 7, section 10 and section 11. Cf. also *Die Methoden der universellen Synthesis und Analysis* (in G.W. Leibniz, *Hauptschriften zur Grundlegung der Philosophie.* Bd. I. translated by A. Buchenau, edited by E. Cassierer, Leipzig, 1904, section 39–50, Gerh. Ausg. Bd. VII, S. 292–298) S. 45. The concept of eternal truth stems from the scholastic tradition, and, for example, in Descartes embraces (*Principles of Philosophy,* 1. Part, section 48 and 49) much more than mathematics.
4. Cf. L.E.J. Brouwer, *Over de grondslagen der wiskunde* (*On the Foundations of Mathematics*) Amsterdam, 1907, in: *Collected Works I,* Amsterdam, 1975, p. 68 f.
5. Cf. also the phrase '(in a single intuition)' (A 734/B 762). One could also argue that as an act of a human person it is in any case an event in time which also occurs in distinct phases, for example, by taking together units in time 'one by one' (A 103).
6. On several occasions Kant stresses the parallel function of the schemata in the guidance of the apprehension. For example (A 718/B 746), he poses that in the geometrical construction of a triangle we connect the elements of pure intuition in the same way as in the apprehension of an empirical object, i.e. according to the schema of the respective concept. It is the same 'bildende Synthesis . . ., wodurch wir in der Einbildungskraft einen Triangel konstruieren' which we use in the apprehension of an empirical thing (A 224/B 271). For the function of the schemata cf. also D. Lohmar, 'Kants Schemata als Anwendungsbedingungen von Kategorien auf Anschauungen in *Zeitschrift für philosophische Forschung.* Bd. 45, 1991, S. 77–92 und 'Wahrnehmung als Zusammenspiel von Schematisierung und figürlicher Synthesis. Überlegungen zur Leistung der Einbildungskraft bei Kant', forthcoming in *Tijdschrift voor Filosofie,* 1992.
7. N. Kemp-Smith translates 'charakteristische Konstruktion' as 'construction by means of symbols', thus wiping out the reference to Leibniz.
8. In addition to this, Kant mentions analytical judgments which are algebraically formulated. They have to be presupposed by geometry and claim, for example, the identity of one method of creating a quantity with another one (a=a, a+b>a, B 16 ff.; and a=b = > a-b=b-c resp. a+c=b+c, B 204). These propositions are not synthetic but analytic (and thus rest on the use of the principle of contradiction, cf. B 17), thus they cannot be axioms.
9. Cf. Leibniz conception of a *caracteristica universalis* in *Die Methoden der universellen Synthesis und Analysis,* (a.a.O.), S.50. On the relation of algebra and *caracteristica universlais: Zur allgemeinen Charakteristik* (in: G.W. Leibniz, *Hauptschriften zur Grundlegung der Philosophie.* Bd. I., a.a.O., S. 30–38 Gerh. Ausg. Bd. Vii, S. 184–189).

Kant differs at some points from Leibniz. In Leibniz the medium of the (analogous) extension of our knowledge is arithmetics. In Kant this medium consists in the perceptual qualities of signs and especially of their configuration.

10. Cf. D. Hilbert, *Neubegrundung der Mathematik.* (In: Hilbertiana, Darmstadt 1964, S. 12–32) 18 f., and P. Bernays, *Über Hilberts Gedanken zur Grundlegung der Arithmetik.* In: Jahresberichte DMV 31 (1922), 15 ff. Similar positions are held by C. Parsons (cf. *Mathematical Intuition.* In: Proceedings of the Aristotelian Society, Vol. 80 (1979–1980, 153 ff.) and K. Wuchterl (*Die phänomenologischen Grundlagen mathematischer Strukturen.* In: Philosophia Naturalis, Bd. 11 (1969), S. 225 f., 230 f.). In his *Logical Invesitigations* Husserl criticises Lambert for the use of this method of analogous proof (Hua XIX/1, 73 ff.). This critique can be transferred to Hilbert's contentual metamathematics. Cf. D. Lohmar, *Phanomenologie der Mathematik,* Dordrecht 1989, S. 112 f., 159 f., 204.
11. Cf. L.E.J. Brouwer, *Intuitionism and Formalism* (In: Benancerraf P./Putnam H.. (Eds.) *Philosophy of Mathematics,* Englewood Cliffs 1964), S. 67 ff. and Brouwer, *Over de grondslagen der wiskunde* (*On the Foundations of Mathematics*) Amsterdam 1907, in: *Collected Works I,* Amsterdam 1975, p. 53, 70, 97.
12. Cf. A Heyting, *Mathematische Grundlagenforschung, Intuitionismus, Beweistheorie,* Berlin 1934, S. 14 and statement VIII in Brouwer's *Over de grondslagen der wiskunde* (*On the Foundations of Mathematics,* Amsterdam 1907, in: *Collected Works I,* Amsterdam 1975), p. 99.
13. Cf. A. Heyting, *Intuitionism,* Amsterdam 1956, p. 3.
14. Ibid, p. 3.
15. Cf. J.N. Mohanty, *Edmund Husserl's Theory of Meaming,* Den Haag 1969 and G. Heffernan, *Bedeutung und Evidenz bei E. Husserl,* Bonn 1983.
16. Thus Husserl was criticised for being a Platonist. He rejects this accusation in his *Entwurf einer 'Vorrede' zu den 'Logischen Untersuchungen'* (In: *Tijdschrift voor Filosofie,* Jg.I (1939), pp. 106–33 and 319–39). This criticism rests on the presupposition: Whoever speaks of ideal objects cannot avoid a metaphysical hypostasis. But Husserl, when using 'Platonism' in a positive way, always adds quotation-marks. This indicates that we have to accept something like 'truth in itself' in mathematics as a starting point and as a problem which is to be explained. This is not to claim that 'eternal truth' exists in a kind of 'higher reality'. 'In this 'Platonism' there is no theory of knowledge implied, but the simple acceptance of an obvious pregiven fact which lies pregiven to all 'theory of knowledge'.' (loc.cit., p. 131). His 'so called Platonism consists not in any metaphysical or epistemological substantiations, hypostatizations or theories but in a single allusion to a kind of original givenness, which as a rule is falsely denied.' (loc. cit., p. 118). In this sense everyone is a 'Platonist' who is not hindered by a philosophical phobia of a certain tradition and who tries to speak appropriately of mathematical objects.
17. For Husserl's theory of 'ideative abstraction' cf. Hua XIX/1, 111–115, 176 ff., 225 f. and XIX/2, 690–693. In the *Logical Investigations,* the quality (Setzungscharakter) of the articulating acts is regarded as insignificant (gleichgültig) cf. Hua XIX/2, 670, 690 ff. In later writings Husserl points out the necessity of imaginative acts in the complex of eidetic variation, cf. Hua III/1, 146 ff., Hua XVII, 206, 254 f. und EU 410 ff., 422 f. Eidetic variation is even possible when we start with a single object varying it in our fantasy.
18. Cf. Hua XIX/1, 106, 111, 113 ff., EU 314 f., *261 ff.* Even in imaginative variation the objects of the acts are individuals in a fantasy-time, cf. EU 309, *257 f.*
19. In the *Logical Investigations* the realm of objects in time and the realm of real, individual objects coincide, cf. Hua XIX/1, 129. My acts are also real objects.
20. Most important is *Erfahrung und Urteil,* 303–316 (resp. *Experience and Judgment, 253–264*). To give some background information and to support the authenticity of the text posthumously edited by L. Landgrebe, I give some hints to the original material and the date of its production. The text of *Experience and Judgment* coincides

to a large extent ('=') with these originals. Besides some new arrangement and grammatical adjustments, roughly each tenth to fifteenth word is changed (short additions and deletions included). Mostly these are stylistic changes and terminological adjustments. The most important parts stem from Summer 1917 and belong to the 'Bernauer manuscripts on time' whose edition is prepared in the Husserl-Archives in Leuven. Landgrebe's typewritten compilation 'Phantasie und Individuation' (L II 11, consisting of the original manuscript A I 20, L II 12, L II 13, all Bernau 1918) and a duplicate of L II 11 on which Landgrebe worked further (M III 3 VII), hints at the used material of L II 13 (cf. M III 3 VII, Bl. 95 '(Id. 3–11)', 'Id.' is the Husserlian signature of L II 13). For the most important parts I give some information on the origin (left: EU, page, line (German edition, Hamburg, 1964); mid: signature of typewritten copies, page, line; right: signature of Husserl's stenographic originals, page, a/b)

EU	304, 21–305, 06	=	MIII3VII	112, 00–112, 21	=	L II 13/10a
EU	305, 07–305, 15	=	MIII3VII	98, 19–99, 04	=	L II 13/5a
EU	305, 20–306, 04	=	MIII3VII	113, 00–114, 00	=	L II 13/8a
EU	306, 04–306, 10	=	MIII3VII	109, 06–109, 12	=	L II 13/8b–9a
EU	306, 14–307, 20	=	MIII3VII	113, 13–116, 06	=	L II 13/10b–12a
EU	307, 22–308, 05	=	MIII3VII	109, 13–110, 12	=	L II 13/9a
EU	308, 06–308, 24	=	MIII3VII	107, 01–108, 08	=	LG II 13/8a–8b
EU	398, 24–309, 05	=	MIII3VII	100, 03–100, 21		
EU	309, 19–309, 24				=	F I 39/21a
EU	309, 30–309, 33				=	F I 39/21a
EU	310, 06–310, 18	=	MIII3VII	116, 11–117, 02	=	L II 13/12a–12b
EU	310, 18–311, 05				=	F I 39/21b
EU	311, 17–311, 21				=	F I 39/21b
EU	311, 22–311, 31	=	MIII3VII	99, 09–99, 19		
EU	313, 09–313, 25				=	F I 39/21b–21a
EU	314, 07–316, 09	=	MIII3IV2	144, 01–118, 12	=	B III 12/90 ff.

Ms. F I 39 is the third part of the 'Vorlesung über transzendentale Logik' from 1920–21. Its first (F I 37) and second (F I 38) part are more or less printed in Hua IX. The originals of the typewritten compilation 'Gegenstand und Sinn' M III 3 IV 1 (duplicate of M III 3 IV 2) stems partly from B III 12 ('Noema—Sinn', about 1920–1922).

21. Husserl works out the objective duration of acts in the supplements to his *Lectures on the Consciousness of Inner Time*. To perform a mathematical judgment implies running through a process which has an extension in objective time (cf. Beilage XIII, Hua X, S. 130–134). I start with modelling the idea of the subject, proceed with it, and 'come to an end with it' (loc. cit., S. 131). But we have to separate this process of judging extended in objective time from 'the judgment itself'. What I am intending in a judgment 'is a timeless idea which can be meant in innumerable judging acts as the same in the absolute identical sense' (loc. cit., section 130). The process of judging can take more or less time but what is meant ('the judgment itself') does not fit into the category of longer or shorter duration (loc. cit., section 96 f.). A mathematical proposition is 'timeless', 'not in objective time' and 'has no duration' (loc. cit., section 96).
22. Cf. EU, 309–313, *258–261*. For Husserl's thesis of omnitemporality of irreal objects of understanding cf. to K. Held, *Lebendige Gegenwart*, Den Haag, 1966, section 49–56.
23. Husserl was well aware of the fact that this model is not appropriate for every form of constitution. Especially for the constitution of the data in inner time-consciousness itself: 'Not every constitution obeys the schema of apperception-appercepted contents' (Hua X, section 7, Anm.1.). For this sometimes overestimated self-correction and delimitation of the schema in the context of his analyses of inner time-consciousness itself: 'Not every constitution obeys the schema of apperception-

appercepted contents' (Hua X, XXXIII ff. and R. Sokolowski, *The Formation of Husserl's Concept of Constitution*. Den Haag, 1970, 177 ff., R. Bernet, 'Einleitung' (In *Texte zur Phänomenologie des inneren Zeitbewußtseins (1893–1917)*. Hamburg, 1985, section XIV ff.

24. Cf. J.N. Mohanty, 'Husserl's Formalism', in: *Phenomenology and the Formal Sciences*, edited by Th. Seebohm. D. Follesdal and J.N. Mohanty, Dordrecht, 1991, section 93–105 and D. Lohmar, *Phänomenologie der Mathematik*, Dordrecht, 1989.

The *Bhagavadgītā* in the Mahābhārata

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Whatever is here, on Law, on Profit, on Pleasure, on Salvation, is found elsewhere, but what is not here is nowhere else.[1]

I

The Mahābhārata is no mere text: it is a tradition. It embodies a tradition. The tradition of the Mahābhārata is built into the extraordinary form of its text.[2] Though Vyāsa is the purported 'author' of the Mahābhārata, the text of the Mahābhārata does not come down to us as Vyāsa narrated it. Instead we have it as narrated by the bard reporting it as Ugraśravas narrated it to Śaunaka in the Naimiṣa forest. The bard Ugraśravas comes by the descendants of the Bhṛgu clan headed by Śaunaka performing the twelve-year sacrifice. Śaunaka asks Ugraśravas to narrate the genealogy of the Bhṛgu clan. Ugraśravas's narration, which begins with the story of creation, leads to the story of Ruru, the Bhṛgu ancestor. Ruru had once vowed to put an end to the race of snakes. He had been dissuaded from doing so by being told of the story of Janamejaya's snake sacrifice and how Āstika had stopped it. This provokes Śaunaka to enquire about Janamejaya's snake sacrifice. Ugraśravas had been present at that sacrifice and he narrates to Śaunaka the story of Āstika and how he had stopped Janamejaya's sacrifice. Vyāsa had also attended that sacrifice along with his disciple Vaiśaṃpāyana. During a break in the sacrifice, Janamejaya had enquired about his lineage, that of the Bharatas, and how the Kurukṣetra war had come about. At Vyāsa's bidding, Vaiśaṃpāyana had narrated the story of how the breach between the Pāndavas and Kauravas had arisen and culminated in the Kurukṣetra war. Ugraśravas reports this narration to Śaunaka. Thus, even the main story of the Mahābhārata, the story of the war between the Kauravas and Pāndavas, comes down to us through a series of reported narrations.

The extraordinary narrative technique of the Mahābhārata consists in that it is not only a series of reported narrations but that at every level of reporting the original narration is preserved by it being reported in direct speech. Further, since at every level the narration is provoked by an

interlocutor's query, the text does not proceed as a continuous narrative but instead in the form of a dialogue. That is, at the outermost level the bard reports the story of the Mahābhārata as a dialogue, between Ugraśravas and Śaunaka, in direct speech. Ugraśravas in turn reports it as a dialogue, between Vaiśaṃpāyana and Janamejaya, once again in direct speech. Thus even at this level of simplification, the Mahābhārata comes down to us in three layers of sequentially reported dialogues, each embedded within the other, each one of which is in direct speech. And in the actual text of the Mahābhārata, any particular narrative comes down to us as embedded within several layers of dialogic texts of reported direct speech.

The sequential embedding of the dialogues is ensured by its being reported at every level by a third party who is not a participant in the dialogue. The narrator being a third party ensures the objectivity of the text and also frees it of interlocutor's intention. In the Mahābhārata, the third party reporting is always preserved. Thus Śakuntalā, in response to Duḥṣanta's enquiries about her parentage, tells her own story as she heard it being told by Kaṇva to a visiting sage.

> *Śakuntalā said:*
> Then listen, my king, how this story has come to me, and how this came to be, and how in fact I became the hermit's daughter. One day a seer came here who raised questions about my birth, and hear how the reverend spoke to him, sire.
> "Viśvāmitra as you know," he said, "performed of yore such huge austerities. . . ."
> In this manner did Kaṇva describe my birth to the great seer who had questioned him, and thus, overlord of men, should you know me for Kaṇva's daughter. For I think of Kaṇva as my father, never having known my own. So, sire, I have told you exactly as I have heard it.'[3]

So is the presence of the narrator as an eyewitness in the arena of the narrated events and the line of transmission of the narrative scrupulously ensured within the Mahābhārata. For instance:

> *Janamejaya said:*
> 'I first wish to hear what was said between the King of Snakes and Kaśyapa in that forest, which must have been empty of people. By whom was it witnessed and who heard what came to your ears? When I have heard that, I shall set my mind on the destruction of the snakes.'
> *The councillors said:* '
> Sire, listen to the tale that someone has told us about the encounter on the road between this prince among brahmins and this prince of the snakes. A certain man had been looking for dead branches to use as kindling wood for a sacrifice and had climbed up a tall tree. The snake and the brahmin were unaware of him sitting in the tree. . . . Afterwards he came here and told his story in the city. What we told you about the encounter of Takṣaka and the brahmin was precisely as it happened and was witnessed. Now that you have heard it, you must provide as it pleases you.'[4]

It is important to note that in both the above cases the narrator testifies to the authenticity of the text that she/he is reporting. Thus Śakuntala assures; 'I have told you exactly as I have heard it.' So do the councillors; 'We told you . . . precisely as it happened and was witnessed.' This is comparable to the sayings of the Prophet which in the Islamic tradition have canonical value as *hadith*. The authenticity of these statements is established through *isnad*, a process of evaluation by the examination of links in the line of transmission. The presence and veracity of each witness in the line of transmission, from the first 'Companions of the Prophet' to the recorder, are evaluated and the *hadith* accordingly accepted or rejected.[5] Similarly, Vyāsa's claim to being the author of the Mahābhārata rests on the fact that he had 'been a witness to the deeds of the Kurus and the Pāndavas'.[6]

The third party who was an eyewitness to the dialogue, reports it in direct speech along with the context of the dialogue. The narrator who was present at the original narration not only reports the text but also the circumstances in which it took place. The reported text is thus embedded in its dialogic context by the enveloping reporting text. The narrative is invariably set in its narrative event.[7]

As is evident from the above instances, no story in the Mahābhārata is told in vain but only in response to a query in its dialogic context. The context provides the justification for its narration. And not just that. The context provokes the narration. The story of the past is narrated only in so far as it is relevant to the present, in order to understand how the present came to be. Hence it is the presence of Śakuntalā in a hermitage living as the daughter of a celibate that provokes the telling of her story. This is the nature of a narration of a genealogy which traces the past as it leads up to the descendent to whom it is narrated. This is also the nature of history. History is the reclamation of the past, from the vantage point of the present, in order to comprehend how the present came to be. Thus:

> *The Bard said:*
> 'Thereupon the snake woman Jaratkāru summoned her son; and, following the words of Vāsuki, King of Snakes, she said to him, "Son, I was given to your father by my brother for a purpose. The time has come. Do what must be done!"'
> *Āstika said:*
> 'Why did my uncle give you to my father? Tell me the truth, and when you have told me I shall do as I must'.
> *The Bard said:*
> 'Then undaunted, for she wished her kinsmen well, Jaratkāru, the

sister of the King of Snakes, told him,. . .'[8]

While retaining its eyewitness objectivity, the knowledge of the past is not passively transmitted, but is instead dialogically reclaimed from the vantage point of the present. The story of the past is told by the narrator only in response to a query by the interlocutor in the context of the present that it brought about. In every narrative, its narrated events are those that bring about *this* narrative event. Hence every narrative is self-contextualizing. The text weaves the context of its own telling.

The preservation of the reported text, as an *utterance*,[9] in its individuality and with its voices, set in the context of its narrative event within the reporting text, *finalizes*[10] it, closing it as a local-text which can then exist monadically in relation to the global-text. In other words, each of the stories in the Mahābhārata, though integrally embedded within the global-text of the Mahābhārata, can nonetheless exist as unitary texts in their own right, without a necessary reference to the global-text of the Mahābhārata. Hence the story of Śakuntalā, Naḷa, Yayāti or for that matter even a discourse like the *Bhagavadgītā* can exist as an independent unitary text outside the Mahābhārata. But since every story within the Mahābhārata is provoked by a query in a specific context each local-text has its precise place within the global-text. Every story within the Mahābhārata, like a Leibnizian monad is self-contained and unitary, while being simultaneously in harmony with the global-text. Even today these local-texts or episodes, known as *prasangas,* constitute the basic performance unit of the Mahābhārata, be it in readings, theatre, or for that matter, in television serials.

Though each story is closed, the embedding of the narrative in its narrative event, makes every text mirror its context. The story of Janamejaya's sacrifice is narrated to Ruru when he embarks on a similar venture. That of Yayāti, whose son Ruru gave up his youth at his father's behest, is told in the context of Bhiṣma taking the vow of celibacy to fulfil his father's desires. Naḷa's story, of how he lost his kingdom at the dice game, is narrated to Yudhiṣṭhira when he loses his everything at the dice game. Thus every text in the Mahābhārata, each in its own way, like a Leibnizian monad reflects the global-text.

Different dialogical contexts reclaim the same past differently. The same story or the narrated events—'the work in the totality of all its events'[11]—may be reclaimed in different contexts in the form of different narrative texts. Within the Mahābhārata the same story may be told more than once—in different contexts, in different ways, to different ends; each time reclaiming different *semantic potential* of the same narrated events. In *The Book of Beginning* alone the story of Āstika is told several times—as different narrative texts—twice by Ugraśravas to Śaunaka in two different contexts, once by Brahma when he assures the snakes that Āstika will be born to save their lineage from Janamejaya's sacrifice; once to Ruru when he enquires about Janamejaya's snake sacrifice; once to Āstika by his

mother when he enquires about the circumstances and reasons of his birth and once by Āstika himself to Janamejaya during the snake sacrifice. Even the *Bhagavadgītā* is repeated in the Mahābhārata.

In the lateral third party transmission, the third party who is not an active participant in the embedded dialogue reports it in the enveloping dialogue. He reports not only the text but also its context. The location of the narrator in the arena of the narrated event as passive eyewitness gives him a local omniscience. Since the dialogue is reported in direct speech, as it unfolds, a continuous nexus is established between the dialogic narrative text and its effect in the realm of action or the dialogic context of the narrative event, which is reported by the narrator in the enveloping text. Hence, every dialogic text in its narrative movement continuously indexes the present as the events unfold in real time. The text represents the 'world-in-the-making'.[12]

Every text is alternately a reporting and a reported text. And given the structure of repeated embedment, every narrative is sequentially the narrative event of the text it embeds and the narrated event of the text it is enveloped by. And since every text reports the past through the use of the quotative frame, the *verbum dicendi* '. . . said', every dialogic level sequentially indexes a point in time.

Not only is the story of the past told in response to a query in the present which it brought about, but it is told to motivate action in the realm of the present in which its narrative event is located. Though it is in response to the interlocutor's query that the past is reclaimed, in so far as his actions are conditioned by the story of the past that the narrator recites, there is, in a sense, a shift in the locus of agency from the interlocutor, who acts, to the narrator and more so the story. Thus:

Kaśyapa said:

> . . . Now devour you the two of them since they are mad with battle fury, each out to vanquish the other, and then swiftly finish the task you have set for yourself.

The Bard said:

> Hearing his father's word, the sky-sweeping bird came down with a terrifying swoop. . .[13]

Or again:

Arjuna said:

> The delusion is gone, Acyuta, and by your grace I have recovered my wits. Here I stand with no more doubts. I shall do as you say. . . .

Sañjaya said:

> Then, seeing that Dhanañjaya again held his Gāṇḍiva bow and arrow, the great warriors again roared their approval.[14]

The illocutionary act of the narration of the embedded text has its

perlocutionary effect on the narrated event of the enveloping context.[15] The repeated collapse of the dialogic text into the dialogic context, reported text into the reporting text, the story into the story-telling event, makes the illocutionary act of the embedded narrative event, by its perlocutionary effect *move* the outer narrated event, and, given the structure of repeated embedment, cumulatively *moves* the global-text in a continuous sequence—*through time.*

'Authoritative discourse cannot be represented—it is only transmitted.'[16] The canonical texts are authoritative and are transmitted. The lateral transmission of the Mahābhārata is, however, in contrast to the pattern of transmission of the canonical texts or for that matter the other epic *Rāmāyaṇa.* These texts are not laterally structured with dialogic embedment but are linearly transmitted, that is, they are handed down. These texts are consequently 'finished' or finalized and purport to be context-free. In the Mahābhārata the authoritativeness of the text is ensured throughout by the preservation of the text, at every level of its transmission, in its original voice. While in the Mahābhārata the embedment of the text in its context, that is achieved through the eyewitness narration and third party transmission, finalizes the local-text, the global-text is, given the structure of repeated embedment, cumulative.

The canonical texts, known as *smṛiti,* have divine authors. But the texts are never given as narrated by their divine authors. They are handed over to their human recipients by their authors and transmitted. But at the first link in the human chain of transmission, when the first human recipient hands it down to the next generation, it is done in the presence of its divine author. Thus for instance, in case of the *Mānavadharmaśāstra* when the sages approach Manu to get the laws:

> *Manu said:*
> 'The Imperishable One composed these sacred laws and himself taught it to me in the beginning and I taught it to the devotees of Marīci and other sages. Bhṛgu here will fully recite it to you, for he has learned it in entirety from me.'
>
> Then the great sage Bhṛgu being thus addressed by Manu, pleased in his heart said to all the sages: 'Listen. . . .'[17]

At the moment when the text is placed in the line of transmission its divine author is present as a third party and as the silent ratifier of the authenticity of the transmitted text. God in these cases is literally the *superaddressee.*[18]

This is also true of the Mahābhārata and its 'author'. The text of the Mahābhārata does not come to us as narrated by Vyāsa, but instead as it is narrated to Janamejaya by Vyāsa's disciple Vaiśampāyana in his presence. When asked by Janamejaya to narrate the story of the Kurus and Pāndavas, Vyāsa asks his disciple to narrate it to him:

> Having heard the question, Kṛṣṇa Dvaipāyana turned to his student Vaiśampāyana sitting at his side and instructed him: 'Tell him in full, as you have heard it from me, how of old the Breach occurred between the Kurus and the Pāndavas.' Hereupon that bull among brahmins acknowledged his guru's command and narrated the entire Epic to the King.[19]

In the first link of the chain of transmission of the Mahābhārata, Vyāsa, its 'author', is its silent ratifier, the *superaddressee.*

The cumulative open-endedness is also ensured in the text by the displacement of Vyāsa, the 'author' of the Mahābhārata, from a position of final authority. Vyāsa is not the final author of the Mahābhārata as it has come down to us. The story of the Mahābhārata as Vyāsa told it, is itself embedded in a dialogic context and placed in a line of transmission within the Mahābhārata. In its present form the text of the Mahābhārata itself states that it has grown since Vyāsa 'authored' it.

The non-linear embedding and the essential fragility of the dialogue makes it possible for the text to be opened up at any point, keeping the Mahābhārata perennially open-textured. Wherever a question can be asked a question is asked and a story comes up in answer to it—an independent local-text, but organically embedded in the context of the global-text. It is this that also contributes to, what some critics have pointed out as, the overdetermined nature of the Mahābhārata. But it keeps the Mahābhārata ever an open-text, allowing it to be opened or closed at any point without doing violence to its overall coherence.[20] The Mahābhārata can hence manifest itself in different 'editions'. The absence of a single overarching authorial voice in tandem with the essential fragility of the dialogue also enables the Mahābhārata to incorporate within itself a vast heterogeneity of voices of encyclopaedic proportions.

The Rāmāyaṇa is known as the *ādi kāvya*—the original poem. It is finished and its author Vālmiki beheld a vision of the entire epic in the cup of his hands. The Mahābhārata in contrast, though finalized at every level, given its structure, is cumulative. The Mahābhārata is authoritative, cumulative and open-ended. Tradition has it that the Mahābhārata is *Itihāsa*—'thus it was'—history.

A *paramparā—from one to another*—is a lineage. It could be the lineage of a family—*vaṃśa paramparā*—or the lineage of learning—*guru paramparā.* In the Mahābhārata these two *paramparās* or lineages run side by side, intersecting and interweaving, each motivating the other.[21] These are the lineage of the actors, *vaṃśa paramparā,* that the genealogies recount in the narrative at any point, the lineage of the transmission of the narrative, and the narration of these genealogies that keeps both these lineages *moving.*

The mutual dependence of these two *paramparās* is brought out in several instances in the Mahābhārata. The best example, however is Karṇa. He was Kunti's illegitimate child, born before she was married to Pāndu. She

had abandoned him and Karṇa had been brought up by a charioteer. The tragedy of Karṇa's life is that although he was a brother to the Pāndavas and belonged to the same lineage, they had reviled him as he did not know his genealogy. What makes his situation all the more poignant is that he is referred to by them as *sūta putra*—charioteer's son—and as a *sūta* he ought to know not only his, but everyone else's genealogy.

The legitimacy of the *guru parampara* is also brought out in Karṇa's case. Karṇa had learnt from Paraśurāma certain arts by telling him he was a brahmin, Paraśurāma sees through the deception and curses that the knowledge Karṇa had acquired from him should fail Karṇa at the moment he needs it most. Ekalavya's story is similar. He had gone to Droṇa to learn from him the art of archery. Droṇa had declined to teach Ekalavya as he was not qualified for it not being born a kṣatriya. Undaunted, Ekalavya considers Droṇa his teacher and masters the art by practising it in front of a clay image of his *guru*. When Droṇa learns of this, he demands his teacher's fee in the form of Ekalavya's right thumb, thus withdrawing from Ekalavya the knowledge of archery that Ekalavya had purportedly, and illegitimately, learned from him.

The genealogies are narrated during the sacrifices which are performed by the descendants of a lineage. In fact, the narration itself is seen as sacrificial action. Just as a sacrificial action has a fruit or consequence—*phala*, the narration too is seen as an action and is considered to have a consequence which is stated in the beginning of the narrative as its *phala śruti*. Often, the narration, and its conse-quence, is explicitly compared to a sacrifice:

> Upon hearing this the king waxed wroth with Taksaka; and as the fire blazes forth with the offered oblation, he blazed forth with the offering of Utanka's speech.[22]

The sacrifice is performed in fulfilment of the debt one owes to the gods for looking after the well-being of the lineage and maintaining the world-order—the *vaṃśa paramparā*. This is 'the debt to the gods'—*deva ṛṇa*, and is the first of 'the triad of obligations' everyone is bound by—*ṛṇa traya*. The second is the *ṛṣi ṛṇa*—'the debt to the sages'. This is the debt one owes to the sages of lore for the heritage that they have bequeathed and is to be discharged by receiving the tradition and handing it over to the coming generation—the maintenance of the *guru paramparā*.

The genealogies which are narrated in reported direct speech, preserving the original voices and tense, *enact* the lineage or the *vaṃśa paramparā*. The sequential use of the quotative frame, the *verbum dicendi*, in the past tense—'. . .said'—*enacts* the serial transmission of the genealogy or the *guru paramparā*. The legitimacy of the lineage rests on the authoritativeness of the genealogy. Thus the narrative axis of the global-text of the Mahābhārata simultaneously represents the axis of the authoritativeness of the genealogy, the legitimacy of the lineage that rests on it, their mutual motivation and parallel,

cumulative movement in time.

The Mahābhārata is an *indexical icon*[23] of a tradition and its history; of the knowledge of the past and its cumulative transmission through time, and most importantly, of the knowledge of the past as it motivates the present, at every moment, in its movement towards the future. In every telling, the story that made the past intercedes on behalf of the making of the story of the future. This epic is not about the 'absolute past'.

The Mahābhārata is a perennially repeated dialogue—a continuous and ongoing dialogue of a very plural cultural tradition with itself. And not all dialogues need imitate the form of Platonic dialogues wherein the interlocutors by a dialectical pendular back and forth movement seek to come to rest at the truth. Dialogues in real life move not in a pendular fashion, but instead go round and round, in an ever-growing spiral, one subject leading to another, one event reminding us of another, in a series of related digressions, repeatedly coming back to the central theme and drifting away again only to come back to it again and again from another angle and then yet another. This is the structure of the Mahābhārata, as also of human experience. Human experience proceeds neither from axiomatic origins to multiple articulations nor from its multiple manifestations to their unitary ideal. But instead in a gradually emerging pattern, out of disparate but not unconnected experiences, the text of each being necessarily embedded in a context, and the context of each leading inevitably to another text, of what is at first sight 'a bloomin' buzzin' confusion'. The Mahābhārata embodies in its structure its central concern; *dharma sūkśmata*—the never, ending dialogic struggle in search of the elusive Right Way in the midst of life's bewildering complexities. The Mahābhārata is about life, all of it; and the book of life has no critical edition.

II

The *Bhagavadgītā* is set in the battlefield of Kurukṣetra. The feud of succession between the two branches of the Bharata lineage, the Kauravas and Pāndavas, culminates in the Mahābhārata war. Dhṛtarāṣṭra, the blind father of the Kauravas, expresses a desire to know how the war is progressing. Vyāsa grants Sañjaya, the blind Dhṛtarāṣṭra's charioteer, a divine vision with which he can see the entire battlefield from wherever he is, and Sañjaya narrates the Kurukṣetra war to Dhṛtarāṣṭra. It is on the tenth day of the war that Sañjaya arrives with the news that Bhiṣma has fallen. Bhiṣma is not only the Commander-in-Chief of the Kaurava army, he is also known to be an invincible warrior. Most importantly, he is the grandfather of both the Kauravas and the Pāndavas. It is in response to Dhṛtarāṣṭra's agonized queries as to how the Pāndavas could ever have taken up arms against Bhiṣma, and how they could ever have defeated him, that Sañjaya narrates the commencement and progress of the war.[24]

Dhṛtarāṣṭra is not the only one to be confronted by this moral predicament. Moments before the commencement of the war, Arjuna, the hero of the Pāndavas, asks his friend and charioteer Kṛṣṇa to position his chariot between the two armies so that he can study the battle formations. As he surveys the Kaurava army, Arjuna is struck by pangs of moral agony. The enemies arrayed against him are his cousins. Their Commander-in-Chief is his grandfather Bhiṣma. The other great warrior against whom he will have to take up arms is Droṇa. Arjuna was his protégé. Standing between the two armies about to clash, Arjuna downs his bow and tells Kṛṣṇa that he has no desire to go to war against his cousins, elders and teachers. Rather than participate in a fratricidal war Arjuna threatens to renounce his claim to the kingdom and become an ascetic. It is Kṛṣṇa's counsel to Arjuna, in this context, exhorting him to go to war that has come down to us as the text of the *Bhagavadgītā.*

The intricate weaving of the text of the *Bhagavadgītā* into the context of its narration, *after the announcement of the fall of Bhiṣma,* is not merely a successful dramatic device, but is in keeping with the narrative technique of the Mahābhārata. Saṅjaya narrates the story of the war to Dhṛtarāṣṭra, in response to his shocked query, on hearing of Bhiṣma's fall, as to how it came to be that the Pāndavas had taken up arms against Bhiṣma and how they could ever have defeated him. Kṛṣṇa's discourse to Arjuna is also provoked by precisely the same moral dilemma confronted by Arjuna of having to go into battle against his elders and which consequently leads to the fall of Bhiṣma. The narrated events of the text of the *Bhagavadgītā* are those that bring about the context of the narrative event in which the narrative is located. Within the Mahābhārata, the text of the *Bhagavadgītā* recreates itself in the context of its own creation.

Bhiṣma's fall is the appropriate context for the narrative of the *Bhagavadgītā* for other reasons too. Bhiṣma was the heir to the Bharata lineage. But to comply with a whim of his father, he had renounced his claim to the throne, and to forestall the possibility of his progeny staking any claim to it, had vowed to remain a celibate. It is this vow that earned him the appellation Bhiṣma—'The Awesome One'. It is this vow that leads to the series of illegitimacies through which the Bharata lineage is kept going that motivates the central story of the Mahābhārata culminating in the Kurukṣetra war. Bhiṣma is the ultimate cause of the war. He is its first sacrificial victim. As Kṛṣṇa tells Arjuna, the war he is about to fight is no ordinary war. It is the Lawful War to reestablish legitimate order in the world; *dharma yudha.* The battlefield of Kurukṣetra is the sacrificial ground of the grand sacrifice for the sustenance of the social and cosmic order; *dharma kṣetra.* The sacrifice of the celibate Bhiṣma on the battlefield of Kurukṣetra, becomes in the *Bhagavadgītā* an emblem for the sacrifice that is performed for the sustenance of the cosmic order.[25]

The Mahābhārata has numerous stories about the disruption brought about by the celibate. The story of Jaratkāru is one such. Jaratkāru was the last of his line and an ascetic. He wanders into a cave where he finds men hanging from a thread with their faces down about to fall from heaven. The thread is being gnawed at by a rat and there is only one strand left intact. On enquiry, Jaratkāru discovers the men to be his ancestors. The thread is his lineage. He is the last strand. The rat is Time.[26] Every person stands between his ancestors and his descendants. He is the nexus between the past and the future generations. It is through him that the ancestral line has to continue. And not just that. The well-being of one's ancestors depends upon the continuation of their line into the future. The ancestors are kept in heaven by the oblations that their descendants offer to them and the sacrifices that are performed. The obligation to have progeny is one's duty to one's ancestors; *pitṛ ṛṇa*—one's debt to one's ancestors. This is the last of the triad of obligations.

The celibate does not recognize this debt to his ancestors. By not having progeny he jeopardizes the continuity of the lineage and also the well-being of his ancestors. He not only stands out of the realm of the sensual but also the arena of the social. He is a constant challenge to not only the social but also the cosmic order. Viśvāmitra, for instance, was a king who sought to attain godhood through his asceticism. He failed to become a god, but succeeded in attaining a brahminhood. He fell in his asceticism and as a consequence was instrumental in founding the Bharata lineage. Bhiṣma in contrast was a god who was born as an earthly king. He renounced his claim to the kingdom and vowed to be a celibate and as a consequence the lineage of the Bharatas floundered.

The fragility of the lineage is a central preoccupation of the Mahābhārata. The continuous oscillation between dissolution and regeneration, where every lineage is rescued from extinction, by means legitimate or illegitimate, is a recurring motif in the Mahābhārata. This is true of the story of Bhiṣma, Jaratkāru, Takṣaka, Parikṣit. And in a sense, this is also the story of Śakuntalā and Bharata. Bhiṣma, the last of the Vasus, was to be sacrificed like his brothers in the Ganges by his mother and sent back to heaven, releasing him from the curse of earthly life. But his father's query to his mother as to the meaning of her action made her leave him behind on earth as an heir to the Bharata lineage. But his vow of celibacy threatened the continuation of the Bharata lineage. His brothers died childless. Dhṛtarāṣṭra and Pāndu were born to their wives through Vyāsa, by Bhiṣma's step-mother invoking the principle of levirate. Dhṛtarāṣṭra's blindness forbade him from inheriting the throne. Pāndu hence acted as the king. But the curse on Pāndu made it impossible for him to have offsprings and the Pāndavas were born to his wives through Kunti's spell. Abhimanyu was the only surviving offspring of the Pāndavas. While in his mother's womb he learned how to penetrate a battle formation, but he had never learned how to come out of one. During the Kurukṣetra war he broke into a formation and died trapped inside, unable to emerge out of it. His posthumous son Parikṣit was still-born. Kṛṣṇa resuscitated him and

the Pāndava line continued. He incurred the wrath of a sage who cursed him to be killed by nightfall. Parikṣit was bitten by Takṣaka at just the moment when he thought he had outlived his curse. To avenge his death, his son Janamejaya vowed to put an end to the race of snakes and performed the snake sacrifice. Takṣaka was the last of the snakes to be sacrificed by Janamejaya when Āstika intervenes and lets Takṣaka live and the race of snakes continue. Jaratkāru's asceticism threatened the continuity of his lineage. He took a wife at the behest of his ancestors and fathered Āstika. Āstika saved not only his father's but also his mother's lineage from extinction.

A sacrifice may be performed for two purposes. It may be performed by the individual with the intention to attain a specific desired end, mundane or supramundane. This is to allow the expansion of the sacrificer within the universe. The intention of the sacrifice is the *sankalpa*, and the desired consequence is the fruit, *phala*.

In contrast to the above kind of sacrifices, which are performed with the intention of fulfilment of personal desired ends, there are sacrifices which are performed for the welfare and well-being of the lineage or the community. These sacrifices are further magnified, and are performed not merely for the welfare of the community, but instead are viewed as being instrumental in the maintenance of the social and cosmic process; in order to 'hold the universe together' or 'keep the wheels of the universe rolling'. The sacrifice is in a sense reified, and the entire cosmic process is seen as being maintained by and dependent upon the proper performance of the sacrifice. The sacrifice continuously renews and recreates the cosmos and it generates the power that keeps the universe going; a power derived from the creative potency of the sacrificial act. The sacrifice is paramount, and it sustains the universal cosmic process, both human and non-human, both mundane and supramundane. The entire cosmic process is seen as an ongoing sacrifice:

> Beings thrive on food
> Food springs from rain
> Rain emanates from sacrifice
> It is from action that sacrifice stems.
>
> Know then that,
> From Brahma action emerges
> Brahma from the sound of the imperishable *Om*.
> Thus is the all-pervading Eternal
> Everpresent in the sacrifice.[27]

The sacrificial acts thus can be performed for two ends. Either for personal fulfilment, or for universal, cosmic sustenance. Strictly speaking, the latter sacrifice does not have a desired end or intention, as it is the sacrifice which sustains the cosmic process. In keeping with the dual

purpose of the sacrifice, the sacrificial acts are classified accordingly. Those acts which are performed for personal fulfilment and individual expansion are known as *kāmya karma*, or desired acts. In contrast, there are the sacrificial acts that are performed in order to maintain the universal cosmic process. And since these sacrificial acts sustain the cosmic order they do not have any desired end from the standpoint of the sacrificer. These are social acts that maintain the regular, ongoing social and cosmic process and are hence enjoined acts or *niyata karma*. These acts are not motivated by personal desires but are prescribed to the person by tradition, in keeping with his place in the larger scheme of things. He is seen in this view not as an agent, an autonomous locus of desires and actions, but instead as a part of a larger unit and order of things, social and cosmic. The *niyata karma* are enjoined acts and are not optative like the *kāmya karma*. Consequently, these acts are not universal and open to everyone, in the sense that anyone who has a specific desire and the means to do so can perform it. But instead, are strictly defined in terms of the person's station in life and his place in the order of things. These acts are what tradition lays down as proper and required for the person depending on his class and stage in life; this is the *varṇāśramadharma*. These are not open to all, but depend upon and change according to the person's station in life. This is the *svadharma* of the person. *Dharma* is *that which sustains*. Tradition embodies it in a corpus of canonical texts known as *smṛti—the remembered*.

Underlying this are two diametrically opposed views of a person and his place in the scheme of things. The first is that of the person as an agent and the locus of desire and action, involved in the complex sequence of desire-intention-action, and its consequence. The agent desires the fruit, performs the sacrificial act with the intention of attaining it, and through the supramundane consequence of the sacrifice accrues the fruit, thus attaining his personal expansion and fulfilment in the universe. The other view, sees the person not as an agent, a locus of desire and action, but rather as a part of the larger order of things—not the agent of action, but merely an instrument of it; the person, not in-himself, but instead among-others. The sacrifice, in this case, is not an act of supramundane intervention, resorted to and aiming towards the fulfilment of personal desire and expansion, but is rather a creative process of renewing and sustaining the cosmic process.

This dichotomy is reflected in the structure of the sacrificial ritual in terms of the relationship between the *yajamāna* and the *yājakas* or *ṛtviks*. The *yajamāna* is the one for whose benefit the sacrifice is performed. The *yājakas* on the other hand are those who actually perform the ritual sacrifice. They are hired ritual specialists who perform the sacrifice on behalf of the *yajamāna*. Though the sacrifice is a collective endeavour involving several *yājakas*, with each specialist performing his prescribed task, it is nonetheless construed as a single act. Further, though the *yājakas* are the ones who actually perform the sacrifice, it is not seen as their action

but that of the *yajamāna*, in so far as the fruit of the action accrues not to them but to the *yajamāna* on whose behalf the sacrifice was performed. The *yajamāna* is the sole agent of the sacrificial act—*kartṛ*—and the *yājakas* are merely his hired instruments—*nimitta*.[28]

The ascetic is one who has renounced all desires in the world. He consequently is free of all obligations to the world. Having renounced the world he participates in neither of the two forms of sacrifice; neither to expand his person in the world nor to keep the wheels of the world rolling. Standing out of the social and the cosmic order, he is bound by neither the desired nor the enjoined acts.

> Āruṇi went to the world of Prajāpati, and going up to him, he said: 'By what means, O Lord, can I give up rites completely?' Prajāpati said to him: 'A man should forsake his sons, brothers, relatives, and so forth; he should give up the topknot, the sacrificial string, the sacrifice, the ritual code, and Vedic recitation; and he should disregard the worlds of *Bhur, Bhuvas, Svar, Mahas, Jana, Tapas, Satya, Atāla, Pātala, Vitāla, Sutāla, Rasatāla, Talatāla, and Mahātāla*, and the entire universe. Let him take a staff and a garment; and let him give up everything else.'[29]

But this act of renunciation is itself an act of will on his part. It is the instance of a will turned inwards, an intention that is directed away from any desired end. In him the nexus between intention and act, *sankalpa* and *karma* is severed. He is the instance of pure will, a will that is not directed towards any end; a free agent, whose actions are governed neither by his desires nor the constraints of the world. 'The strong-willed great ascetic' is the autonomous agent and the individual par excellence.[30]

It is out of this tension within the concept of sacrifice and its opposition to the notion of ascetic renunciation that Kṛṣṇa in the *Bhagavadgītā* draws out a form of thought, in the process radically reconstituting them. Kṛṣṇa does not speak of an act of sacrifice in the sense of the performance of the rite of sacrifice, but instead of an act of sacrificing. This metaphorical shift is effected by juxtaposing the concept of sacrifice alongside that of the notion of ascetic renunciation. The shift in the semantic field is brought about by counterposing at the primary level, action as understood as an intended act of desire, *kāmya karma*, as against ascetic renunciation, or *karma sanyāsa* as the giving up of desire and consequently of all action. It is out of this interaction that Kṛṣṇa constitutes a new concept of action, simultaneously embodying aspects of both and transcending them.

The transformation is brought about by altering the relationship between the constituents of the sacrificial ritual. The ritual is defined as consisting of three elements. The first is *dravya*, the substance of the oblation, i.e. ghee, soma or the animal. The second is *devatā*, the deity to whom the chants are addressed and the offerings are made; i.e. Agni, Indra, Prajāpati. And lastly, *tyāga*—this is the statement of renunciation

pronounced by the *yajamāna* as the oblation is offered: 'This is for Agni, not for me!'[31]

This is achieved by not only severing the nexus between the intention and the act, *sankalpa* and *karma*, as embodied in the orthodox notion of sacrifice as *kāmya karma*, but also the negation of the will and agency that is central to the ascetic notion of renunciation; by speaking of an act that is devoid not only of desire and intention but also agency. While retaining the centrality of the act it modifies it by giving up its essential link with desire and intention. Out of the traditionally opposed and mutually incompatible notions of sacrifice and renunciation, the other dimensions of the new concept are generated. The act now is seen as being simultaneously both a sacrifice and a renunciation—the act in which the desire is renounced and intention is sacrificed—*kāmasankalpavarjitah*. The act as a sacrifice is retained along with renunciation, but it is now an act in which desire and intention are renounced and agency is sacrificed—the renunciation of desire and the consequence of action and the sacrifice of agency. What was hitherto mutually opposed, sacrifice and ascetic renunciation, are fused together to bring forth an entirely new concept of act embodying aspects of both. Every act is performed without any intention of attaining a desired end or the presumption of agency; such an act is *niśkāma karma*. Through the renunciation, *tyāga*, of desire, intention and agency, every act becomes an act of sacrifice, since every act is now performed as a sacrifice—sacrifice not of the substance, *dravya*, to the fire, but the sacrifice of the agency and intention that were hitherto seen as essentially constituting the act. And to the extent hitherto every sacrificial act was seen as inherently associated with intention and desire, every act now becomes an act of sacrifice. Every act a sacrificial act; an act of sacrifice; a sacrifice of the act.

These acts of sacrifice, devoid of desire and intention, now become the sacrificial acts of the other kind—no longer acts of sacrifice performed for the fulfilment of personal ends, *kāmya karma*, but the sacrificial acts performed solely 'to keep rolling the wheel that has been set in motion'.[32] These are the *niyata karma*, the enjoined acts, fixed for the person by the tradition, as per his *svadharma*. These are all, each one of them sacrificial acts, for these are the acts in which the individual will is surrendered to the dictates of tradition, and personal desire and agency have been sacrificed for the well-being of the whole.

This view of the act as a sacrifice, performed to keep the wheels of the universe moving with the actor renouncing his agency and intention, is underpined by the metaphysics that Kṛṣṇa expounds to Arjuna.—'The Lord has not created into people either authorship of acts, or the acts themselves, or the concatenation of act and fruit; that is the doing of Nature';[33] 'actions are performed by the three forces of nature, but deluded by self-attribution, one thinks: "I did it!"'[34]

This metaphysical view of the cosmos is demonstrated to Arjuna by Kṛṣṇa in his theophany when he reveals his cosmic form. In his vision of the cosmic form, *viśva rūpa darśana*, Arjuna sees Kṛṣṇa as embodying within him the past, present and future of the entire cosmos. He is the sustainer of the cosmos and the ultimate agent of all action in it. All actions and their consequences in the Universe are preordained by Him. In his vision Arjuna glimpses into the future and sees all the warriors he was loath to kill already destroyed by Kṛṣṇa. Kṛṣṇa usurps all agency in the cosmos and asks Arjuna to be merely his instrument: 'Of these warriors arrayed on both sides . . . I have myself doomed them ages ago: Be merely my instrument in this, left-handed Archer!'[35] Kṛṣṇa is the *yajamāna* of the cosmic sacrifice, its sole *kartṛ*. Arjuna and others are but his *yājakas* carrying out their prescribed tasks, mere instruments—*nimitta*.

Whereas throughout the Mahābhārata it is the knowledge of the past that moves the agent to act, in the *Bhagavadgītā* it is the knowledge of the future, the foreknowledge of the inevitability of the events to come as revealed to him by Kṛṣṇa, that motivates Arjuna's action in the battlefield of Kurukṣetra. It is this knowledge of the true nature of agency in the social and cosmic order and of one's place in it that is the sacrificial fire of knowledge—*jñānāgni*—to which desire, intention and personal agency are sacrificed. This is *the knowledge sacrifice—jñānayajña*.

There is a progressive enlarging of vision or omniscience in the Mahābhārata culminating in the cosmic omniscience of the *viśva rūpa darśana*. The local omniscience of the eyewitness in the arena of the narrated event as it unfolds at the present moment which is characteristic of the narrative at every level enlarges in the narration of the Kurukṣetra war into the global omniscience of its narrator. Saṅjaya, the narrator of the war, by the grace of Vyāsa, has a divine insight, 'a vision beyond the range of the senses and hearing from afar and knowledge of thoughts of others, and of past and present, and awareness of portentous happenings, and power to move through the sky.'[36] And within his narration of the war, in the *Bhagavadgītā*, in Kṛṣṇa's theophany when he reveals his cosmic form, this global omniscience explodes into the cosmic omniscience of the *viśva rūpa darśana*; a vision of the past, present and future of the entire cosmos.

That Kṛṣṇa's theophany in the Mahābhārata, wherein he reveals the story of the cosmos, occurs while in his role as Arjuna's charioteer, between the two armies about to clash, in the middle of the sacrificial field of Kurukṣetra, is no accident either. For the bards of the Mahābhārata who recite the genealogies during the sacrifices are also *sūtas*—charioteers.

'Today I reveal to you' says Kṛṣṇa to Arjuna displaying his cosmic form as the ultimate agent of all action and asking Arjuna to go into battle. *Today* is the day of the commencement of the great Mahābhārata war. It is the day the *Dvāpara Yuga* ends and the *Kali Yuga* begins. Standing on the threshold between two Eons, Kṛṣṇa reveals his cosmic form, embodying the past, present and the future, and declares:[37]

I am Time
the creator
grown old to destroy

The *viśva rūpa darśana* is an icon of the Mahābhārata; an icon of an icon, embedded within it and encompassing it.

ACKNOWLEDGEMENTS

The title of this paper is my tongue-in-cheek homage to J.A.B. van Buitenen. While the aim of the first part of the paper is to refute his contention that the Mahābhārata is an unstructured 'loose-leaf-file' encyclopedia; the second part attempts to extend this analysis in order to argue out his view that the *Bhagavadgītā* is not an interpolation, but that: 'The *Bhagavadgītā* has been conceived and created within the context of the Mahābhārata', as stated in his book of the same title. I must thank several people who have helped me in writing this paper. Wendy Doniger first started me thinking along these lines and, under strange circumstances, compelled me to *finalize* it. Zulfiquar Ahmad and Raja Sundararaman commented on earlier drafts. Vidwan A.S. Venkatanathan and H.L. Chandrashekara have helped with Sanskrit translations. R. Ramachandra as a 'native' scholar has consistently resisted my analysis, forcing me to clarify my position further. A.K. Ramanujan for his constant encouragement. Michael Silverstein for everything that he has taught me; and that is a great deal. *But this paper is for Inger.*

NOTES AND REFERENCES

1. *The Mahābhārata, Book I, The Book of the Beginning*, Translated and edited by J.A.B. van Buitenen, University of Chicago Press, Chicago, 1973, I. 56.34, p. 130.
2. A.K. Ramanujan (Repetition in the Mahābhārata, in *Essays on the* Mahābhārata, edited by Arvind Sharma) has stated that the Mahābhārata is a tradition in so far as it is actively present in the collective consciousness of Indians. As he puts it: 'In India and in Southeast Asia, no one ever reads the Rāmāyaṇa or the Mahābhārata for the first time. The stories are there, "always, already"'. ('*Three Hundred Rāmāyaṇas*' in *Many Rāmāyaṇas* Ed. Paul Richman Oxford, Delhi, 1992, p. 46) The present paper, however, argues that the maintenance of tradition—*paramparā*—is the central concern of the Mahābhārata and that this concern is embodied in its textual structure.
3. *Mahābhārata*, 1(7) 65.17–66.17; pp. 161–3.
4. *Mahābhārata*, 1(5) 45, 26–33; p. 112.
5. Jan Vansina, *Oral Tradition as History*, University of Wisconsin Press, Madison, 1985, p. 30.
6. *Mahābhārata*, 1(6) 54.20–23; p. 126.
7. Roman Jakobson, 'Shifters, Verbal Categories, and the Russian Verb in *Selected Writings II*', Mouton, The Hague, 1971, pp. 133–36.
   Cf. Richard Bauman, *Story, Performance and Event: Contextual studies of oral narrative*, Cambridge University Press, Cambridge, 1986, p. 2.
8. *Mahābhārata*, 1(5) 49.1–5; p. 115.
9. M.M. Bakhtin, *Speech Genres and Other Late Essays*, translated by Vern W. McGee edited by Caryl Emerson and Michael Holquist, University of Texas, Austin, 1986, pp. 61–95.

10. M.M. Bakhtin, op. cit., p. 76.
11. M.M. Bakhtin, *The Dialogic Imagination Four Essays by M.M. Bakhtin*, edited by Michael Holquist, translated by Caryl Emerson and Michael Holquist, University of Texas Press, Austin, 1981, p. 255.
12. M.M. Bakhtin, op. cit., p. 30.
13. *Mahābhārata*, 1(5) 25.25–26, p. 83.
14. *The Bhagavadgītā in the Mahābhārata*, translated and edited by J.A.B. van Buitenen, University of Chicago Press, Chicago, 1981 (40) 18.73–(41).1; p. 145.
15. J.L. Austin, *How to do Things with Words*, edited by J.OP. Urmson and Marina Sbis, second edition, Harvard University Press, Cambridge Mass., 1962. pp. 98ff.
16. M.M. Bakhtin, op. cit., p. 344.
17. *The Laws of Manu*, I 58–60.
18. M.M. Bakhtin, *Speech Genres and Other Late Essays*, op. cit., p. 126.
19. *Mahābhārata*, 1(6) 54.21–22; p. 126–7.
20. Bauman has shown, based on his study of oral narratives, that new episodes can be introduced into the narrative by exploiting the structural opportunity provided by what he, following Genette, calls *ellipsis*, or by breaking durative action, pp. 90–93.
21. Wendy Doniger first drew my attention to this aspect of the Mahābhārata when she gave a course on the Mahābhārata at the University of Chicago in Spring 1987.
22. *Mahābhārata*, I 1(3) 192–5, p. 54.
23. Stanley Jeyaraja Tambiah, *Culture, Thought and Social Action—an anthropological perspective*, Harvard University Press, Cambridge, Mass., 1985, pp. 156–61.
    Cf. Michael Silverstein, *Metaforces of Power in Traditional Oratory*, unpublished paper, 1982.
24. *The Mahābhārata; Bhiṣmaparvan*; part I 6.15.60, edited by V.S. Sukthankar and S.K. Belvalkar, Bhandarkar Oriental Research Institute, Poona 1945.
    This extraordinary fact that the Bhagavadgītā is narrated after the fall of Bhiṣma, but something which is entirely in keeping with the narrative technique of the Mahābhārata as argued in the present paper, was first brought to my attention by J.A.B. van Buitenen in his *The Bhagavadgītā in the Mahābhārata*. I was surprised to find that most Sanskrit pundits were unaware of it.
25. Kurukṣetra, the battlefield is referred to as the Samantapancaka. After the near total destruction of the ksatriyas by Paraśurāma, the blood of the princes formed five lakes. This became the Samantapancaka, the sacred spot—*kṣetra*—where Paraśurāma offered *rakta tarpana*—blood oblations—to his Bhārgava ancestors. This was at the juncture between the *Treta* and the *Dvāpara Yugas*. The same spot becomes a sacrificial ground again during the Kurukṣetra war, at the juncture between *Dvāpara* and *Kali Yuga*.
26. *Mahābhārata*, 1(5) 41.20–30; p. 105.
27. *Bhagavadgītā*, 3.14–15.
28. For an excellent discussion of this relationship, see Daya Krishna, 'Yajña and the doctrine of karma: a contradiction in Indian thought about action'. *Journal of Indian Council for Philosophical Research*, Vol. VI No. 2, 1989.
29. Samnyāsa Upaniṣads, translated by Patrick Olivelle, Oxford, Oxford University Press, 1992, p. 115.
30. In the Jain tradition the *jina*—the ultimate ascetic—is characterized by four features—*anantacatuṣṭaya—anantajñāna, anantadarśana, anantavīrya* and *anantasukha*, i.e. Infinite-knowledge, vision, power and happiness. These are classically, in all other theologies, atributes of God.
31. Frits Stall, 'Ritual, grammar, and the origins of science in India', *Journal of Indian Philosophy*, 10 (1982) p. 6.
32. *Bhagavadgītā*, 3.16.
33. *Bhagavadgītā*, 5.14.

34. *Bhagavadgītā*, 3.27.
35. *Bhagavadgītā*, 11.33.
36. *Mahābhārata, Bhiṣmaparvan*,16.7–9; p. 87.
37. *Bhagavadgītā*, 11.32.

Defining Violent and Non-Violent Acts: A Supplement

In my paper 'Defining Violent and Non-Violent Acts', (*JICPR*, Volume IX, Number 3, 1992), I have defined violent and non-violent acts both positively and negatively. Briefly speaking, positively, I have defined a violent act as one which is an essentially hurt-causing act or which is performed with the intention of causing hurt; and a non-violent act as one which is an essentially comfort-causing act or which is performed with the intention of causing comfort. And, negatively, I have defined violent and non-violent acts as the contradictories of non-violent and violent acts, respectively. That is, I have defined violent and non-violent acts both positively and negatively with reference to what I may call feeling beings, beings, say, who can feel hurt or comfort.

The question which I would like to ask here is this: May we not perform violent and non-violent acts with reference to non-feeling beings as well? Let me take an example in this connection: In anger I disfigure or damage or destroy somebody's property or even my own property. May I not be performing a violent act in performing this act?

I am led to maintain that I am performing a violent act in performing the said act, in exactly the same sense in which I perform a violent act in harming, say, someone's body. My argument in this regard, briefly and possibly somewhat arbitrarily stated, is this: A person's property is an extension of his self, something which he has made an additional part of himself. Thus, in disfiguring or damaging or destroying it, one is performing an essentially hurt-causing act, just as one is performing an essentially hurt-causing act, say, in harming his body. Thus, in performing the said act, one is performing a violent act.

I come to possess a whole lot of articles. In the course of time I find that I do not wish to have them any more or do not need them any more or they have become useless. And I get rid of them by destroying them. Do I perform a violent act in doing so? Now, in doing so, I do not perform a violent act. For when I do not wish to have these articles any more, or do not need them any more, or they have become useless, that means that I do not regard them as my property any more. And therefore, in destroying them, I do not perform an essentially hurt-causing, and hence a violent, act.

I have mentioned above an example of a violent act which I may perform with reference to a non-feeling being. In the same way I may perform a non-violent act as well with reference to a non-feeling being.

Thus, for example, when I protect somebody's property, I protect an extension of his self, and therefore I perform an essentially comfort-causing, and hence a non-violent, act—just as I do so when, say, I protect his body.

In my paper 'Defining Violent and Non-Violent Acts', I have mentioned several examples of violent and non-violent acts in the sense of their being essentially hurt-causing and comfort-causing acts, respectively. And I have defined abusing and slapping as examples of the acts of the former kind, and being loving or affectionate and complimenting somebody on his attainments as those of the latter kind. In the rest of the present paper, I would like to define some more examples of the acts of both these kinds. And I would define assaulting, harassing, molesting, torturing, undergoing penance, insulting, withdrawing help when that help is still needed, and not doing what one is required to do to help somebody as those of the first kind; and being accommodating, showing humility, giving a patient hearing, making an effort to understand somebody, taking an interest in and working for somebody's welfare, and looking after one's own preservation and well-being as those of the second kind.

I would begin with defining the above-mentioned examples of violent acts in the sense of their being essentially hurt-causing acts.

Assaulting, in one sense, is illegally using physical force against another person, so that, as involving this force, it is hurtful.

Harassing is causing annoyance or distress, which is a form of hurt, to another person.

Molesting is forcibly interfering with another person in a sexual way, so that as being this interference it is hurtful.

Torturing is causing great pain to a person deliberately, particularly with a view to punishing him or extorting a confession or getting some information from him.

Undergoing penance is suffering voluntarily for some serious wrong which a person believes has been done, or suffering as enjoined by somebody else for some serious wrong which a person is believed to have done.

Insulting is offending or causing hurt by doing or saying something rude.

Withdrawing help when that help is still needed, which does not stand in need of being defined in full, involves putting a person to inconvenience, and this involves causing him hurt.

Not doing what one is required to do to help somebody, which again does not stand in need of being defined in full, involves, I think, causing hurt or distress to a person.

After defining these violent acts in the sense of their being essentially hurt-causing acts, I will go on to define examples, which I have mentioned before, of non-violent acts in the sense of their being essentially comfort-causing acts.

Being accommodating, in one sense, is being willing to help or adjust, which means being willing to provide for a person's convenience, and this involves causing him comfort.

Showing humility is sincerely acknowledging that one's performance is not worth it, is not at all or is far from what it ought to be, or is nil or inconsiderable in respect of the praise or gratitude which it receives, which (action) on the assumption or being a positive moral value involves moral appreciation, and this involves a comforting feeling.

Giving a patient hearing, I think, is giving a hearing to a person to his utmost satisfaction, which involves causing him comfort.

Making efforts to understand somebody, which does not stand in need of being defined in full, involves, as in the previous case, doing so to his utmost satisfaction, which again involves causing him comfort.

Both taking an interest in and working for somebody's welfare and looking after one's own preservation and well-being, which again do not stand in need of being defined in full evidently involve causing comfort, in the former cause, to somebody else, and in the latter case, to one's own self.

Let me state in brief in this place what I have tried to do in this short supplementary note. What I have tried to do primarily is of a limited nature. I have applied my definitions of violent and non-violent acts, which I have given in relation to feeling beings, to a non-feeling being or object of one particular kind, namely a non-feeling being which is somebody's property. I have argued that we may perform violent and non-violent acts in relation to this object as well, as it is an extension of the person's self, and therefore we may do something to it, as to his body, which is essentially hurt-causing or comfort-causing. In addition to doing this, I have in this note defined some more violent and non-violent acts.

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God and the Crisis of Modernity

I

Rodger Beehler's response to my *God, Scepticism and Modernity* takes a sensitive Wittgensteinian turn.[1] I welcome this, principally because it does not see religion as essentially a theory but as a set of practices to which the religious believer (where the belief is authentic) is passionately committed in her, not infrequently failing, struggle to make sense of her life.[2] No doubt that Wittgensteinian conception reflects a regimented and partially stipulative conception of a believer and of religion as well. There are believers and believers and conceptions of religion and conceptions of religion. But Wittgenstein, like Kierkegaard, was perfectly aware of that.

He had the highest respect for some believers but he turned away from others with disdain. What Beehler talks about is the kind of believer who should be of interest to people who are reflective about religion. My beef with Beehler is over his characterization of the believer's situation, his characterization of the nature of religious belief and over Beehler's conception of religion and how it stands in relation to the rest of culture.

To try, as an initial gesture, to give something of what I have in mind and to show why I argue as I do in *God, Scepticism and Modernity*, I shall begin by commenting on the passage from Wittgenstein that Beehler approvingly cites right at the end of his essay:

> An honest religious thinker (by which I take Wittgenstein to mean a believer who does not actively seek to annul his or her intelligence) is like a tightrope walker. He looks almost as though he were walking on nothing but air. His support is the slenderest imaginable. And yet it really is possible to walk on it.[3]

Beehler correctly, right at the beginning of his essay, articulates the underlying thesis of my book. I would like to re-express it in terms of the above citation from Wittgenstein and in doing so make evident where and in some measure why I take a different road than Beehler. In arguing about what I take to be the irrationality of having religious beliefs for certain people—I think for an increasingly large number of people—in the twentieth century situated in certain intellectually and often materially fortunate circumstances, I had in mind Wittgenstein's 'honest religious thinker': a thinker who won't and indeed can't crucify his intellect. Wittgenstein is exactly right in describing him as a tightrope walker. His support is the slenderest possible. What I seek to show is that in the case of the religious believer the rope will not in fact support him where he is clear-headed and nonevasive. If we remember our Pascal and Kierkegaard, and Beehler's argumentation as well, about practices and making sense of our lives, we will understand that reflective people, deeply caring about life, can come to feel, as Wittgenstein did, that there is a profound and compelling point to our lives and that religion is essential here.

What I shall try to make persuasive is that that point is not really the deep and compelling one they take it to be, both because

(1) there are adequate purely secular sources that yield sense to life, and
(2) that the religious beliefs and practices—belief-in being dependent on belief-that—cannot sustain the tightrope walker for they are in reality without the requisite propositional content.

It is over this latter point where arguments for incoherence crucially enter. I am well aware that it is, as a matter of psychological fact, possible for such people to walk that tightrope. Both Beehler and I once did such tightrope walking ourselves. But I am, beyond any socio-psychological generalization, making the critical and normative comment that if people situated as we are think hard and can, as well, find the psychological resources within themselves to be nonevasive, they will, if my conceptual arguments for incoherence are roughly on the mark, come to find it irrational to believe in God. They will take it to be irrational to continue to accept those central religious beliefs. I am not saying that there are not, and in the predictable future will not be, some philosophers who will remain religious believers even in the face of such incoherencies. What I am saying is that it is irrational for them to do so or that at least in doing so they are operating with an irrational belief. But one should not forget here what I stressed in my book. Perfectly reasonable people can have some irrational beliefs. Indeed, in certain circumstances it may even be desirable to have irrational beliefs. I went out of my way to stress that I was not claiming religious believers were less rational than atheists or other religious sceptics but that belief in God for people so situated is irrational if the conditions I described, and Beehler repeats without critique, are satisfied.

That such tightrope walking *should* no longer be possible is something I argue. I do not just assert it. Even if my arguments are sound—something which in the case of philosophy is always problematic—I make no predictions about their success with believers. Beehler may be right in saying that they are not 'likely to make much headway among those who are passionately claimed and *sustained* by their religious way of making sense of and *facing* life.' What I am prepared to argue, and do argue, is that, if my arguments are sound, that they *should* make such headway. We not only should want to be people who live and relate to each other in certain ways and can find a sense in our lives but we should not want to annul our intelligence either. If my arguments are right, Kierkegaard is right, we cannot, standing where we are, have theistic commitments without annulling our intelligence (crucifying our intellects).

II

Beehler argues that I am mistaken in believing it is irrational for such twentieth century people to believe in God principally because I am mistaken in my understanding of what it is to believe in God, though I also, he would have it, have a mistaken conception of rationality and its import in such domains. Moreover, these two mistakes are linked, as Beehler puts it, 'if we make a mistake in understanding what it is to believe in God, we must make a mistake in judging whether it is rational for the person just described to continue to believe in God.' Beehler, like various Wittgensteinian Fideists, thinks I have an overly intellectualist conception of what belief comes to in religion and what it is to be a religious believer. My central difficulties, he would have it, stem from my mistaken conception of what it is to believe in God.

Let us start with belief. Believers distinguish, Beehler maintains, in a way

that I fail to note, between belief in God and other beliefs. After giving us an interesting little narrative to which I shall return, Beehler asks why, even if all the theoretical difficulties I allege obtain, can't belief in God make sense to the believer in spite of all that, 'because living according to this belief enables him or her to cope with living, even if he or she cannot explain *how* living, according to this belief, "blesses" the one who does so?' The believer doesn't understand how his conception of God makes sense—how he can speak of or conceptualize an infinite individual who is also a person, albeit a bodiless person, transcendent to the world yet acting in the world, an individual, without body, yet everywhere. Such talk utterly baffles him; he understandably can make no sense of it, yet he also knows that it is part of his practice of believing in God and that this practice has transformed his life. In spite of the intellectual impediments, he comes back to his recognition of how this belief, at least seemingly incoherent, enables him to cope with living. He can, on Beehler's account, make neither head nor tail of this strange God-talk about an infinite bodiless person transcendent to the universe, but he holds fast nonetheless to something that he does understand, namely that the practices that go with his sincerely avowing his belief in God sustain him in his entangled life. He knows that, in engaging in these practices, he says certain things in the context of acting in certain ways that he does not understand. Verbal formulae go with his acts of contrition, prayers, marrying, confirming, behaviour at funerals, and the like. They are human practices replete with various speech acts. He uses terms expressive of concepts carrying background beliefs, some of which he does not understand. What he knows—and Beehler seems to take this as sufficient for his belief not to be irrational—is that in understanding and meeting his life in this religious way, he 'finds sense and beauty, and some inexplicable capacity denoted "grace", in the midst of what otherwise can very easily seem . . . an endlessly vulnerable, often ugly, deeply discouraging, and ultimately senseless human condition.' In spite of all his intellectual difficulties with the very idea of God, his belief in God all the same makes sense of his entangled life.

Beehler then asks: 'If a practice does make sense in this way to those who live by it, can't this be a rational ground for keeping to it, even in the face of no coherent theoretical explanation of how the practice is efficacious?' Moreover, to realize how central such way-of-living-considerations are to understanding what belief in God comes to, we need to recognize how very distinctive the conception of belief is when applied to theistic belief. Belief *in* God is central. 'Belief' here is not employed as it is usually employed. Belief, in 'belief in God', is not 'acquired on the basis of evidence, and it is not continued on the basis of evidence'. It is not the belief that God exists and has such and such attributes. Belief in God is trust in God, keeping faith with God, even in the face of not having anything that could be objectively called evidence for His existence. Believing in God is closely

linked to faith and it is not unlike believing in a human being. Suppose, to illustrate, you have a very close friend. You will believe in that friend, that is, trust him. If he does things that appear to be contrary to what friendship requires you will, at least initially, discount them, give them a reading that does not conflict with the trust that obtains between friends. Say, to translate into the concrete, you hear that your friend has been badmouthing you, acting with disregard for you, breaking faith with you. In believing in him, that is in trusting him, you will discount those things, seek a different construal of them, sometimes 'despite overwhelming evidence and accusations that the person is not as he or she claims to be'. This is what believing in him comes to. Without behaviour like that there is no believing-in. Believing in God is like that, only rather pushed to the limit—some might say 'beyond the limit'. It is this feature, Beehler maintains, of 'belief-in', that accounts for the *unshakeableness* of the believer's belief.

Beehler cites Wittgenstein twice to capture what he takes to be the proper sense of belief here but he could as well have been citing Kierkegaard, their thoughts here are so close. The believer's belief, Wittgenstein tells us, shows itself in the way he lives his life and 'not by reasoning or appeal to *ordinary* grounds for belief, but rather by *regulating for* (everything) in all his life'.[4] Or again, Wittgenstein tells us, 'that a religious belief could only be something like a passionate commitment to a system of reference. Hence, although it is *belief*, it is really *a way of living*, or a way of assessing life. It is passionately seizing hold of this interpretation'.[5]

This is a rather poetic articulation of something that is close to the truth and an important truth-claim to make. I agree, that is, with Beehler that that is roughly what belief-*in* consists in when it is belief-in *God* and, while more accentuated, it plainly is in a family resemblance to 'belief-in' as applied to friends, comrades, partners and the like. But what Beehler utterly neglects (and this is philosophically crucial) is that 'belief-in' is logically dependent on 'belief-that'.[6] There can be no believing-in with friends, God, partners, or what not, without believing-that. There can be believing-that without believing-in but not the reverse. Suppose I believe in Gorbachev. That presupposes that I believe that Gorbachev exists—that I believe there is such a chap and that he has certain attributes. I could not believe in Gorbachev without believing that Gorbachev exists and, for the latter, things like evidence are relevant. 'Belief', in this latter use, functions like 'belief' functions in my remark 'I believe that Port Angeles lies across the strait from Victoria'. Similarly there could be no believing in God without believing that God exists: that there is such a reality.

If believing that God exists is a very problematic conception through the groundlessness of our believing or through the incoherence of our conception of God, then that problematicity transfers to our believing-in. If believing that God exists is incoherent, as Norman Malcolm, for example, believes, then believing in God is also incoherent.[7]

Beehler's response might be that whatever we should say about 'belief-in'/'belief-that', it is the deed, action, life-orientation that sorts out religious believers from nonreligious believers. Whether someone believes in God shows itself in what she does, not in what she says or what she thinks can be coherently claimed about what there is. Some will go on and believe in spite of all the incoherencies (if incoherencies they be). They can be intellectually utterly at sea but believe all the same.

That I never denied. My inquiry is whether this is something that, everything considered, is the right thing for a person to do, is what a person should do, if she would keep faith with herself. My argument was that it is not. My argument, it should be noted, is actually a cumulative one and does not, *pace* Beehler, put all its eggs in one basket, though in *God, Scepticism and Modernity,* Beehler is certainly right in stressing, the emphasis was on incoherence. But this stress was against the following background, to wit what we might call lessons learned from the Enlightenment and its aftermath, with what Max Weber called the relentless disenchantment of the world. We have learned, if we are keyed into such a background, that there can be no direct awareness of God, that putative revelations are many and often conflicting, that there is no sound argument for the existence of God and that there is nothing that would count as a good evidential appeal for theistic beliefs. Moreover, the problem of evil is intractable, there is no grounding morality in the natural law (at least where this is understood theistically) or in the morality of Divine Commands.[8] But that is not a tragedy for there are numerous purely secular sources in virtue of which we can make sense of the moral life and our own lives more generally. Wittgenstein thought this Russell-like reaction was superficial but he did nothing at all to show that it was so. If God is dead it is simply false that nothing matters or nothing matters as deeply and profoundly as it does in a God-endowed world. Moreover, this is not at all undermined by immortality being all illusion, perhaps something that is as incoherent as I take the concept of God to be.[9]

We need to have a historical and cultural sense of what has at least arguably been established here or, at the very least, made persuasive, and not as philosophers who not infrequently do reinvent the wheel—always, culturally speaking, trying to start from scratch. We need to see what difference the Enlightenment has made. Some Enlightenment thinkers principally gave us a new *Weltbild* but others, Hume and Kant paradigmatically, for example, did much more than that. Hume and Kant, with their devastating critiques of the proofs and evidences for the existence of God and Hume with his powerful dissection of the problem of evil, dealt natural theology a mortal blow and made very problematical what had hitherto been standard defenses of religion. Fideistic responses, of course, arose. Kant himself, we should remember, was a pietistic Christian. But culturally speaking we have moved farther down the road of disenchantment. We came to be more fully aware of the diversity of

conflicting faiths and we came to see that morality did not require religion and that religion was not necessary to give sense to our lives. Religion became a more vulnerable thing and secular ways of looking at the world gained a stronger footing.

Of course, as a kind of rear guard action, there continues to be arguments purporting to prove or provide evidence for the existence of God, arguments that are ever more arcane and ever more concessive.[10] But these essentially defensive arguments fail to convince and there is a rather extensive agreement that Hume and Kant did the essential work here and what has been going on here in that domain since then is a mopping up operation, correcting here, refining there, meeting objections some place else. I tried to do a bit of that in my *Reason and Practice* and it has been done brilliantly and extensively by J.L. Mackie in his *The Miracle of Theism.*

Two problems remain outstanding, set in large measure by reflective and sophisticated versions of Fideism, including Wittgensteinian Fideism. First, there is the old claim, made even by some atheists, that life—the fullness of the moral life, a deep attuning to the world and a making sense of our lives—requires, as Wittgenstein thought, a religious orientation to be really adequate. Secondly, there is the claim that God-talk could be very obscure, full of paradox and what appears to be incoherencies, and yet in some mysterious way might still make sense. God-talk is distinctive, perhaps even *sui generis,* and necessarily mysterious. But when engaged in by the person who would enter into those language-games and forms of life in the right spirit, such illusive talk still makes rough sense in spite of the complete lack of evidence for the existence of God or even something like an even remotely plausible natural theology defense. This leaves, or seems to leave, conceptual space for the religious believer, as well as for the sceptic, the former being completely invulnerable to the critiques of 'empiricist or naturalistic philosophers' who do not really understand how religious language-games are played or what religious forms of life are like.[11]

Sometimes to this line of argument there is added the historicist thesis that what we have here is a clash between a secular orientation (with or without a philosophical articulation). And a non-rationalistic religious one (with or without a philosophical articulation). But this is not a clash that can be reasoned out, the argument goes, for it is a conflict of unargued and indeed unarguable *Weltbilden* that deeply, and in different ways, inform lives, but nothing non-question begging can be said for one over the other.

God, Scepticism and Modernity, as well as other writings of mine, have been primarily directed at that very modern defence of religion. I have attacked the very idea of there being deep conflicting incommensurable framework beliefs that can only be subscribed to. Part, but only part, of my argument here has been the incoherence argument. If religious sentences of a

crucial sort, e.g. 'God created the heavens and the earth' really are incoherent then there can only be the illusion of believing them, i.e. believing that they are true, for what is incoherent cannot be true and cannot be believed, for there is literally nothing to be believed or to be something with propositional content that can intelligibly be accepted. We can believe, perhaps mistakenly, that 'Mulroney talks faster than Clark' but not that 'Mulroney sleeps faster than Clark' any more than we can believe that procrastination drinks melancholy. Beehler fails to note this because he speaks in the religious case only of believing-in and neglects believing-that. But he also neglects the cumulative nature of my argument. Perhaps if alleged revelations were not so many and so conflicting and if we could not make adequate sense of life without religion, we could set aside the problems of incoherence as technical philosophical problems that we could hope to resolve sometime while continuing to be believers, remaining steadfast in our belief, because of the overwhelming need for God to ground morality and make sense of life. But if books like Richard Robinson's *An Atheist's Values* or my *Ethics without God* have shown that such Fideism is mistaken, then the core of the argument shifts to the part about incoherence.

I stressed the issue of incoherence in *God, Scepticism and Modernity* in the belief that, culturally and philosophically speaking, that is where we are in the state of play of reflectively coming to terms with religion. It was the part of the cumulative argument that needed stressing given our situation. But there is a logically independent point I also made and that needs remaking here. It is linked with the above mentioned historicist defense of Fideism. Even if my arguments about incoherence are fatally flawed and Wittgensteinian Fideist claims are well taken and we only have in such domains conflicting incommensurable, unarguable framework-beliefs and systems of action welling up from differing forms of life, this still would be devastating for Christianity, though less so for the Enlightenment which could perhaps survive a historicist turn, for it is Christianity that proclaims Christ as the Truth and the Way. (Her sister religions would be in similar trouble.)

So my arguments for incoherence belong to a larger scheme of argumentative strategy or (put less scientistically) reflective examination of religion. They are not meant to have the decisive role that Beehler thinks I am claiming for them. They are, or so I would claim, at best a reasonably distinctive wave, in a large swelling sea of the understanding and critique of religion, growing out of the Enlightenment and slowly, I would argue, undermining reli-gious belief or at least the belief-systems and related ways of life of the traditional religions. The Enlightenment case—considerations and arguments—is cumulative and my incoherence arguments have a small but I believe tolerably important part in the whole. Indeed, even if they are mistaken, as such fellow atheists as J.L. Mackie and Wallace Matson believe, the Enlightenment case could be made from the

evidential side and from the critique of revelation and morals' side, showing, as Mackie would put it, that theism is indeed a miracle. I persist in my way of putting things not because I am hubretic or foolish enough to think the Enlightenment case rests on it but because I believe that what I claim is a reasonable approximation of the truth: that is to say, because I really do think such beliefs are incoherent and that it is important to see that. Thus, even if it is correct, that arguments about incoherence are the weakest kind of arguments in such discussions, this is of no considerable moment for they are not being offered, as Beehler believes, as a conclusive argument concerning the rationality of belief but only as part of a larger web of argument which *together* counts, and I believe reasonably decisively, against sticking with a religious orientation. Indeed, it makes an even stronger claim, namely the claim that belief in God is irrational for intellectuals placed as we are placed.

Beehler thinks it is very likely people so situated will not be able to keep religious belief alive. I think that claim is probably right, particularly if the people in question are secure and reasonably affluent. (Look, for example, at the ways the Scandinavian societies have gone and are going.) But I am concerned to argue, whether or not that factual claim is true, that this is the way that it is reasonable for them to go and the way that, everything considered, it is desirable for them to go. I am not principally concerned with educated guesses about how the *Weltgeist* will shift given affluence and security. My concern is through and through normative.

III

I want to turn now to Beehler's little story for it seems to me that when thought through it has implications quite different from those Beehler notes: implications which in fact (or so it seems to me) support my own arguments. Beehler deploys his narrative in an attempt to support his argument against my claim that religious believers of the non-simple sort I discuss live according to concepts that do not make sense. Beehler says that here I overlook the fact

> that there are two different ways in which belief in God might make sense. It might make, or fail to make, coherent sense conceptually: it might invoke kinds of being and processes or relations that cannot be rendered intelligible or coherent with one another by appeal to empirically familiar and well-established phenomena. Or, belief in God might make sense in a different way: *it might prove to be effective practice.*

Beehler argues that a believer would *not* be irrational, indeed would be behaving quite reasonably, if, while acknowledging the incoherence of his belief in God, he continued to believe because he realized that belief yielded an effective practice. His narrative is designed to make this

surprising claim persuasive.

He imagines a primitive society which, without realizing what they are doing, fertilize their fields effectively by strewing over their fields some part of their harvest each fall which they dig into their fields with the next planting. However, they do this without realizing that they are fertilizing and for quite different reasons than we would do such a thing. They believe that the earth is their mother and they 'acknowledge this by offering up some part of what the earth yields them to the earth herself'. But in fact what they do, though without that intention, sustains the land. Beehler remarks that as long as this fertilization technique works it is rational for them to engage in this practice though they follow it for the wrong reasons. He them makes the obvious analogy with religious belief.

So far Beehler has not managed to disagree with me for I argue that *sometimes* it is reasonable and desirable to act on an irrational belief. But I do argue as well that belief in God is irrational for people culturally located as we are and that, generally speaking, for people situated as we are situated now, there is no need to believe in God. It may sometimes be the case, *à la* Kierkegaard, that a person can succeed in crucifying his intellect and believe what he knows to be absurd, even incoherent. And he may be able to carry out actions—live in a certain way—beneficial to himself and perhaps to humanity, acting on those incoherent beliefs. It is at least *arguable* that in doing so he does something which is, everything considered, desirable. Similarly Beehler's hypothetical tribe has an incoherent belief in believing the earth is their mother. And at a certain stage in their enlightenment they would come to realize that belief is incoherent. But it still would be rational for them to continue to fertilize. But their belief that the earth was their mother would still be an irrational belief. When they, realizing the senselessness of their belief that the earth is their mother, cease composting, they make, however under-standable, a mistake. And if they do stop fertilizing it is rational for them, when they see the effect, to return to composting *without* the originating belief. That incoherent belief does no work. We are to suppose that they still do not know *why* what we call composting is so effective. But experience has taught them *that* it is effective. They now spread some of the harvest and dig it in knowing that this is effective—crop yields increase—without their knowing why. So proceeding is perfectly rational.

It is, however, a mistake to describe what goes on through these changes, as Beehler does, as the same practice. First there was the ritual practice of making offerings to Mother Earth. Later, when they see it is incoherent to believe the earth is their mother, they abandon their ritual practice. Still later, after some years of declining crops, they return to a practice related to the old practice but still distinct in no longer being a ritual practice, namely, to the practice of plowing part of their harvest back into the earth each year *because it increases crop yield.* That is their quite distinct reason for doing what they can do—a reason completely different

from the old ritual reason. Note that with this changed rationale the practice has changed. It is no longer a ritual practice. The change is similar to a change where people who first will not eat pork because in some holy writ it is forbidden, later come not to eat pork simply because they see that eating it is somewhat dangerous if not cooked properly, though still not knowing why it is dangerous. Not knowing the causal mechanisms that make it dangerous, they simply know that, not infrequently, people get sick when they eat pork. But their practice of not eating pork is no longer a ritual practice but a purely secular one with an utterly different rationale. But the Christian practice related to belief in God cannot similarly dispense with belief-in God and remain that Christian practice, though surely that practice is not just the holding of certain beliefs, among them the belief that God exists and has certain characteristics. Still that at least putatively cognitive belief is nonetheless an essential part of it. In the pork case and the fertilizing case, the incoherent belief is dropped and a different practice develops, though historically related to the old practice. There is with those new practices (field composting and non-eating of pork) no requirement to crucify your intellect and believe something incoherent but in the Christian practice the incoherent belief is essentially tied to the practice. There is no persisting in the Christian practice without the incoherent belief.

There then arises a standard problem of whether, given a clear recognition of the incoherence of a belief central to the practice—to wit that God actually exists—whether the practice could, in fact, continue to be effective. And secondly, even if it could, would it, everything considered, continue to be desirable to persist in the practice given that is requires one to believe in that which one knows to be incoherent. We, as Beehler stresses, Wittgenstein stresses, do not want to crucify our intellects either. So we do not have a case like the pork case or the fertilizing case where we, without incoherent beliefs, operate with a practice which we see achieves our ends without knowing why. Such a practice is a practice that is quite reasonable to follow. But to continue to follow a practice with incoherent beliefs is an altogether different matter. It is continuing such a practice that is irrational for a person to do if she understand what she is doing. Still, Beehler might reply, isn't there this much left in common between his primitives' practice and the Christian practice, namely that in each case the practice enables them to cope with living?

It is here that the cumulative nature of my argument becomes important. The argument for incoherence, as we have seen, does not stand by itself in my argumentative strategy. The believer says 'My belief is incoherent but it enables me to cope'. I reply—and here the analogy is carried out with the composting people—'But you can cope without your religious beliefs and distinctively religious practices and just as well and indeed perhaps even better without the need to crucify your intellect.' If that claim is well taken, the persuasiveness of the believer's 'needing to cope' argument has

been undermined for he is no longer in the desperate Kierkegaardian predicament of needing to choose between crucifying his intellect and suffering sickness unto death. To persist in the religious practices when there are equally adequate purely secular practices for coping is not a rational way of living.

IV

Beehler makes an independent argument against incoherence arguments that clearly merits discussion. Beehler maintains, 'arguments from incoherences are among the weakest kind of argument, since they rest on what is presently judged to be known (*and so regarded as possible*), and hence are always subject to being overturned by increased knowledge'. The history of science, he goes on to remark, is littered with claims that once were confidently claimed to be incoherent but now are parts of established science. Beehler's examples are: matter is energy, space is curved, time is relative, matter is opposed by anti-matter, continents move, and there are black holes in space. At one time anyone who claimed that continents move or space is curved, or indeed any of these claims would have been taken to be saying something incoherent. Yet today we have very good reasons to believe that such claims are at least approximately true. The believer seeing the fragility of these incoherence claims has good reason, Beehler maintains, not to be very disturbed by charges that some of her central claims are incoherent.

Beehler's argument has the merit of in effect stressing that we should not just look at sentences by themselves but at sentences as they are embedded in practices and in language-games and that we should keep firmly in mind the time and contexts in which these utterances were uttered. What is nonsense standing alone or without a context or sometimes without a new properly specifiable context is sometimes at least intelligible when so embedded. If in 1825 Simone, while living in Montreal, said that she talked to Nadine the previous night in Paris, she would have rightly been deemed to be saying something incoherent—and to be plainly mad—but given the establishment of modern telecommunications such a remark is perfectly intelligible and thoroughly routine. There is a background that once supplied makes a remark that is incoherent without that background perfectly coherent. In the science cases, Beehler mentions, such a background has been supplied at least for knowledgeable people. It is perhaps easiest to see with 'continents move'. With the scantiest understanding of modern geology there will be a rough understanding of what is claimed and what counts for or against its truth. For someone with, in some instances, a rather considerable knowledge of modern physics the same thing is true for the other examples. Similar things should be said for claims that there are unconscious thoughts. What without Freud, and his context embedded examples and elucidations, sounds like a contradiction

in terms is plainly not such a contradiction when we read them with even some rather minimal understanding of Freud. What in one context is incoherent can, not infrequently in a rather verificationist way, be given a context in which it becomes intelligible.

What I claim and argue in some detail in *God, Scepticism and Modernity*, and elsèwhere, is that, in the very context of the cosmological-belief-embedded religious practices of Judaism, Christianity, and Islam, certain cosmological beliefs crucial to these practices can be shown to be incoherent. We do not need to take them out of context and should not do so. In their standard contexts they can be seen to be incoherent. This is not the case with Beehler's scientific examples. Moreover, I look, with some considerable detail, at positivist (Hare and Braithwaite) and various Wittgensteinian and other revisionist (Penelhum, Hick, Crombie) attempts to supply a new or partially new context for such religious or theological beliefs. Sometimes these revisionists, like Beehler, just avoid entanglement with arcane religious beliefs—the cosmo-logical claims of religion—treating religious practices in effect positivistically as if they could exist without such beliefs or (more typically) as if such beliefs were inessential to them. At other times (D.Z. Phillips is a good example) they are in effect so reductionist about such beliefs that they are transformed into religiose sounding secular beliefs (religion becoming morality touched with emotion) or else (and more rarely) the beliefs are let to stand but the new background account doesn't succeed in rendering them coherent.

For these contentions of mine to be convincing we must case by case look at the detail of the particular accounts, something I do in God, Scepticism *and Modernity*, and, as well, carefully inspect the quality of my arguments concerning those accounts. But if my arguments are near to the mark (something Beehler doesn't challenge) then the at least *prima facie* incoherent religious beliefs have not been shown, as similar beliefs in the case of science have been shown, to be coherent by being placed in carefully articulated and broadly testable theories with their appropriate practices. If in what Beehler calls the wilder areas of scientific cosmology, such conditions have not been met, it is perhaps wiser, *à la* Susan Stebbing and Stephen Toulmin, to remain skeptical about the coherence of such accounts. As Max Black argued years ago, 'science' is sometimes a contested honorific label. Not everything that gets labelled as science should be taken as such. Those philosophers given to metaphysical speculation are prone to be rather gullible here. (Wittgenstein had a good nose for that and debunked such 'scientific mythology' very well.)

V

Belief-in, as we have seen, presupposes belief-that. Religious belief cannot *just* consist in belief-in. It must as well consist in some believings-that. Both, as Beehler claims, following Wittgenstein, may be unshakeable beliefs.

Beliefs-that, where centrally embedded, should, for good Quinean reasons, be *relatively* unshakeable. All sorts of things on the periphery should give way first. Similar things should be said for similarly situated beliefs-in and in addition a conceptual-cum-moral dimension enters for them. Beliefs-in involve trust and commitment, and being what they are, will not, and should not, easily be abandoned.

That all is unexceptionable and shows what centrally placed believings-in and believings-that should be. But if the beliefs—the believings-in and/or the believings-that—are taken to be so unshakeable that they will be held no matter what—against any evidence, any considerations of coherence or consistency, against any other considerations at all, including moral conside-rations—then they are *ideological* beliefs and being such they are beliefs which ought not to be held.[12] They are irrational beliefs for contemporary people fortunately placed with a good scientific and philosophical education. If his religious beliefs or key religious beliefs give him a passionately held system of reference regulating everything in his life such that he really has no non-religious beliefs since he, to use Beehler's phrasing, 'regards God as the *ground* of all being and knowing, and interprets everything he or she experiences or encounters according to this grounding belief', then, if his beliefs so encompass everything and stand no matter what, then they are ideological beliefs to be set aside by reflective, knowledgeable persons.[13] They are in a pejorative sense both ideological and metaphysical.

Following Wittgenstein, and against epistemological scepticism, Beehler is right in rejecting universal or global scepticism. Something must at a given time stand fast for doubt to be even possible. But he misses the Peircean fallibilist rendering of essentially the same point, namely that this does not at all mean or establish that anything—any one thing—can, let alone must, stand unshakeably fast. Anything, Peirce tells us, can be doubted but not everything can be doubted at once. Moreover, doubts should have the real context of taking place where there is actually a blockage to inquiry. They should not be merely unreal methodological doubts; that is, not really doubts at all. But this does not at all mean that there are some unshakeable beliefs but only that in any given context some beliefs will stand fast though a new context can arise where those beliefs will in turn be questioned and so on *ad infinitum* for any belief you please. No single belief or set of beliefs need always stand fast, though some, of course, may *as a matter of contingent fact* always stand fast. This is fallibilism, incorporating Beehler's sound conceptual point within the reasonability of fallibilism, where no unshakeable beliefs are claimed or thought *à la* Collingwood to be unavoidable absolute presuppositions. There are no beliefs that must stand unshakeably fast for us, no matter what, though there are plenty of beliefs that we have no reason at all to doubt and that we have no reason to trouble our heads to try to doubt.

Beehler has a religious believer being a believer who believes that 'God constitutes *the* ground from which everything else that is known is engaged and interpreted.' If we take this at face value, many people, particularly in our times, taken to be religious believers and indeed sometimes serious religious believers, are not, in that way of looking at things, religious believers at all, for they will compartmentalize their beliefs, including their religious beliefs. They may be physicists or biologists or logicians—think of Alonzo Church or Saul Kripke—who take their beliefs in physics, biology or logic to be quite autonomous and apart from their religious beliefs. But be that as it may, if the religious believer is the pervasivist with the unshakeable beliefs Beehler attributes to him such that his 'impassioned commitment . . . disposes [him] to interpret whatever appears recalcitrant to belief in God according to what is warranted by this grounding belief itself,' then he is a person in the grip of an ideology, and, if philosophically and scientifically sophisticated, he is not only in the grip of an ideology, his belief is an irrational belief to boot. To stick with it diminishes his reasonability. It is not, *pace* Beehler, rational for a person so situated to continue to believe.

VI

Contemporary religious believers do not live, as Max Weber powerfully stressed, any more than the rest of us do, in hermetically sealed off religious communities free from what James Joyce called the wolves of disbelief. Our *Weltbild* is, as Beehler remarks, one increasingly claimed by the Enlightenment commitment to live according to empirically established truth and evidence. We, even when we are religious, do not live in communities of shared religious belief but live 'more and more within a community of inquiry and critical judgment. . . .' When I talk about standing where we are standing in the twentieth century, I mean we are in such a situation: the situation of the increasing disenchantment of the world. Beehler grants that for people in such situations it is much more difficult to keep religious belief alive in themselves. Kierkegaard, agreeing, tries to make things even more difficult for the believer, for he thinks that only a religious belief that could stand such trial by fire would be worth much. But this leads him to extravagant Tertullian paradoxes. I argue that for someone so placed that he will have sound reasons for taking key religious beliefs to be incoherent and, given this belief, in turn dwelt on and taken to heart, and set against the cultural, including the scientific and philosophical understandings of our time, he should (a) reject religious beliefs as irrational, and (b) come to see that he need not do a Kierkegaard or Hamann and stick with them steadfastly all the same, for he does not really need them in facing life. We do not need them to make sense of our lives. We need more Russell and Feuerbach and less Wittgenstein and Kierkegaard here. To claim that, in that way lies superficiality, is just *parti pris*.

Belief in God indeed involves what cognitive psychology labels 'hot contexts' but some religious believers, as well as some religious sceptics (including some atheists), have been able to take, in a cool hour, a more dispassionate point of view, which indeed is linked with reasonability as the long drawn-out dialogue between belief and unbelief attests. Religion is indeed a way of living and responding to the world, so it certainly is not just a theory and practice running according to dispassionate observation and investigation of the world. Still that practice, in a way Beehler, like the Wittgensteinian Fideists, mistakenly neglects, involves cosmological beliefs as well which try to assert truth-claims. There dispassionate investigation and logical analysis are essential and cannot be set aside and it is there where religious beliefs seem at least to be deeply vulnerable. So vulnerable, I argue, that they ought to be rejected.

Notes and References

1. Rodger Beehler, 'Religion versus Militant Atheism', *Canadian Philosophical Association*, University of Victoria, Victoria, Canada, May 26, 1990. This was part of a symposium on my book *God, Scepticism, and Modernity*, Ottawa, University of Ottawa Press, 1989.
2. For good examples of a scientistic way of viewing religion see the essays by J.P. Moreland and William Lane Craig in J.P. Moreland and Kai Nielsen, *Does God Exist?* Nashville, TN, Thomas Nelson, 1990). For a more religiously sensitive and utterly non-scientistic defense of Christian belief against criticisms of the sort that I raise, see Hendrik Hart's contributions in Hendrik Hart and Kai Nielsen, *Search for Community in a Withering Tradition*, Lanham University Press of America, Toronto, 1990.
3. Rodger Beehler, op. cit., Further citations from Beehler will be given in the text. See Ludwig Wittgenstein, *Culture and Value*, Basil Blackwell, Oxford, 1980, p. 73.
4. Wittgenstein, *Culture and Value*, p. 54.
5. Ibid., p. 64.
6. I.M. Crombie, 'The Possibility of Theological Statements' *Faith and Logic*, edited by Basil Mitchell, Allen and Unwin, London, 1957, pp. 31–48.
7. Norman Malcolm argues that belief *that* God exists is radically problematic but that believe *in* God is not and that in this case belief-in does not, as is usually thought, presuppose belief-that. Norman Malcolm, 'Is it a Religious Belief that God Exists?', *Faith and the Philosophers*, edited by John Hick, St. Martin's Press, New York, 1962, pp. 167–96. I argue against this in my 'On Believing that God Exists', *Southern Journal of Philosophy*, 5, Fall 1967, pp. 31–42.
8. Of course from the Enlightenment on, arguments for this have been myriad. I have tried, as part of my cumulative argument, to argue for such considerations in my *Reason and Practice*, Harper and Row, New York, 1970; and my *Ethics Without God*, Buffalo, New York, Prometheus Books, 1989; and my 'The Meaning of Life', *The Meaning of Life*, edited by E.D. Klemke, Oxford University Press, New York, 1981.
9. Kai Nielsen, 'The Faces of Immortality', *Death and Afterlife*, edited by Stephen T. Davis, Macmillan, London, 1989, pp. 1–30.
10. See, for example, Richard Swinburne, *The Existence of God*, Clarendon Press, Oxford, 1979; and William L. Rowe, *The Cosmological Argument*, Macmillan, New York, 1979. For a critique of such efforts, see Keith Parsons, *God and the Burden of Proof*, Prometheus Books, Buffalo, New York, 1989.

11. D.Z. Phillips, *Belief, Change, and Forms of Life*, Humanities Press, Atlantic Highlands, NJ, 1986.
12. Kai Nielsen, 'On Speaking of God', *Theoria* XXVII, 1962, pp. 110–37.
13. Kai Nielsen, 'Religion and Rationality', edited by Mostafa Faghfoury, *Analytical Philosophy of Religion in Canada*, University of Ottawa Press, Ottawa, 1982, pp. 71–124.

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Notes and Queries

Is *Moksa Sānta* or *Ananta*?

A comment on the excerpt from the *Bhagwatī Sūtra* from Muni Śrī Nāgarāja Jī's book *Āgama Aur Tripiṭaka*, along with a brief comment on Dr Mukund Lath's comment on the same published in Vol. X No. 2.

The *Vyākhyāprajñapti* (*Bhagavatī*), the fifth *aṅga āgama*, is a volu-minous treatise on the Jain philosophy of the canonical age. Therein, we come across an allusion to one wanderer-ascetic, Skandaka, who approached Bhagavān Mahāvīra, and asked him five questions. The first four of them were related to finiteness and infiniteness, viz. 'whether the universe (*loka*), soul (*jīva*), *siddhi* and *siddha* were finite or infinite'. Mahāvīra gave reply to these questions in the context of the doctrine of *Anekānta*. There are four fundamental viewpoints of *Anekānta*, viz. *dravya* (substance), *kṣetra* (space), *kāla* (time) and *bhāva* (mode or state). Thus, according to Bhagāvan Mahāvīra:

	Substantially	*Spatially*	*Temporally*	*Modewise/ Statewise*
loka (universe)	finite	finite	infinite	infinite
jīva (soul)	one soul, finite	finite, because it occupies only innu-merable space points	infinite	infinite
siddhi (abode of *siddhas*)	finite	finite	infinite	infinite
siddhas (liberated souls)	one liberated soul, finite	finite, because it occupies only innu-merable space points	has a beginning but is endless, infinite	infinite

Now, in the *JICPR*, some issues have been raised with regard to the above allusion. The main cause of all these issues are the differences in the philosophical concepts of soul and liberation in Jain philosophy and others.

(1) The *Naiyāyika* and other philosophies believe soul to be all-pervading, whereas, according to the Jain philosophy, soul is co-extensive with the physical body, that is, its spatial extension is the same as that of the body.

(2) According to the Jain philosophy, soul is a *pracaya* (*continum*, whole) of an uncountable number of atomically small points called *pradeśa*, which are inseparable parts of the soul. They are indivisible also.

(3) After becoming liberated, the soul does not spread in the whole universe (i.e., does not become ubiquitous), but the space occupied by it is in a certain proportion (2:3) of the last body.

(4) The space is classified into two types:

(a) Cosmic space (*lokākāśa*)

(b) supra-cosmic space (*alokākāśa*)

No other substance can move or stay in the *alokākāśa*. All substances are confined to the *lokākāśa*.

These four theses are the fundamental beliefs of Jain metaphysics.

Now, if one reviews the answers given by Bhagavān Mahāvīra to the questions of Skandaka in the context of the beliefs of other philosophies such as the soul is ubiquitous and there is no supra-cosmic space, he is sure to consider the Jain views as bizarre. Likewise, the beliefs that the soul exists but is not a continuum of *pradeśas* appears quite strange to the Jains. They cannot conceive soul as something different from this.

According to the Jains, a single soul consists of so many of *pradeśas* that it can spread in the whole universe, but because it remains confined to the physical body, its extension is also equivalent to that of the body. After becoming liberated, there is no cause to make the soul ubiquitous, and hence it occupies only a limited space.

The term *siddhi* used in the present text denotes a particular place or earth. Actually the liberated or the perfect soul does not reside *on siddhi* but the position of the space where the liberated souls stay is near to an earth called '*īṣat prāgbhāra*' and hence the latter is also called '*siddhi*'.

There is no need of any place for the liberated or perfect souls to stay, but they do require space to exist in. '*No substance can exist without space*'; none can stay outside the space. The same law applies even to the liberated souls.

Souls becomes liberated only in the 'human world' which measures 45 lakh *yojanas* in length and breadth. After becoming liberated here, the liberated soul soars upwards and reaches the upper end of the universe (cosmic space) through its natural motion (which is inherent in itself). It cannot go beyond the cosmic space, because there is no media of motion and rest in the supra-cosmic space. Thus it becomes fixed there forever. It does not require any other physical support because it is not corporeal.

The following verse from the *Uttarādhyāyana Sūtra* makes this clear:

aloe paḍihayā siddhā
loyagge ya paiṭṭhiyā

There is no difficulty in believing the liberated soul as a 'substance' and 'consisting of parts'. On the other hand, if soul is not consisting of parts, it is difficult to explain it. The argument put forward by other philosophers against the view believing the soul to be consisting of parts is that whatever consists of parts must be transient. But, for *anekānta*, transitoriness is no problem. According to it, no substance is absolutely eternal; both permanence and transitoriness are natural attributes of substance.

The law that whatever consists of parts must be divisible is also not absolutely true. It applies only to physical order of existence—*pudgala*, and not to non-physical substances. Therefore, the ultimate indivisible part of *pudgala* is called atom (*paramāṇu*), while that of all non-physical (non-corporeal) substances like soul is called *pradeśa*.

The theory of *astikāya* which means 'a homogeneous continuum' is a very fundamental and unique theory of the Jains. The Jain ontology presents the theory of five *astikāyas*, according to which each ultimate reality or substance is a homogeneous continuum of *pradeśas*, each *pradeśa* being the indivisible and inseparable part of the substance.

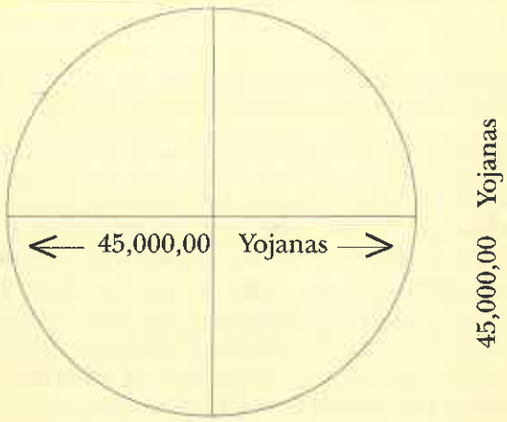
In the fourfold aspects of *dravya, kṣetra, kāla* and *bhāva* (mentioned above), *dravya* (substance) and *paryāya* (modes/states) represent the first and the fourth respectively. The second, i.e. *kṣetra* denotes the space (*ākāśāstikāya*) and the third, i.e. *kāla* denotes the time, which however is not an ultimate reality or substance, but a phenomenon causing the modification or transformation of substances. The entire nature of the five *astikāyas* can be clearly understood only if they are comprehended through the four aspects of *dravya, kṣetra, kāla* and *bhāva*.

Jīva (soul) and *pudgala* (physical order of existence or matter)—both are *astikāyas*. *Siddhi* is an 'earth' and is also *pudgala*, not the *jīva*. *Siddha* is a liberated soul and hence it is *jīva*.

Now, in the context of this discussion, let us try to understand the text of the *Bhagavatī Sūtra*, under discussion.

Siddhi is called 'finite' from a substantial aspect, because the earth (*īṣat prāgbhāra*) is a physical substance or a thing. It is only one and therefore finite.

Siddhi is called 'finite' from a spatial aspect, because it occupies a finite space. The text itself describes it (*siddhi*) to be of 45 lakh *yojanas* length and breadth (or diameter)—*āyāma* and *viṣkambha*. These are two dimensions. Its circumference (*paridhi*) is 1,42,30,249 *yojanas*. (This is according to Mathematics expressed by 0ce = TLd. Here the value of TL is taken to be $\sqrt{10}$.



From the temporal aspect, *siddhi* is said to be infinite. It is described that *siddhi* (the earth) is perpetual (*dhruva*), constant (*niyata*), eternal (*śāśvata*), indestructible (*akṣaya*), unperishable (*avyaya*), fixed (*avasthita*) and permanent (*nitya*), for there was no time when it did not exist, there is no time when it does not exist and there will be no time when it will not exist.

This statement should be comprehended in the context of the doctrine of universe (*loka*) of the Jains. The *loka* is the whole universe or the cosmic space; it has a definite shape and size and some of its stellar bodies or structures also have an eternal existence, one of which is the earth. '*Īṣat Prāgbhāra*' or *siddhi* therefore is beginningless and endless, from the temporal point of view.

Modewise/Statewise—Siddhi, being a kind of physical structure, belongs to *pudgalāstikāya*. Hence, from the point of view of modes, it is possessed of infinite number of modes of colour, infinite number of modes of smell, infinite number of modes of taste, infinite number of modes of touch, because, in all *pudgalas*, these four qualities and their modes are essentially present. Besides them, an infinite number of modes of shapes, heaviness–lightness, non-heaviness–non-lightness, are also found in *siddhi*. Thus, modewise, the *siddhi* is infinite.

When we consider *siddha* from the four aspects of *dravya*, *kṣetra*, *kāla* and *bhāva*, then since *siddha* is *jīva*, we have to consider it in that context.

Substantially, a *siddha* is finite; spatially, a *siddha* consists of an uncountable number of *pradeśas* and also occupies an uncountable number of space-points, the maximum height of a *siddha* is 1 *hasta* and 8 *aṅgulas* (which is equivalent to 53 centimeters approximately) and the maximum height is 333 *dhanuṣya* + 1 *hasta* and 8 *aṅgulas* (which is equivalent to 528 meters approximately).[1] Thus, spatially, a *siddha* is finite.

Temporally, a *siddha* has a beginning but no end; therefore it is infinite. In the *Uttarādhyayana Sūtra* it is very clearly mentioned that when one particular *siddha* is considered, 'it is with beginning but endless'; and when all *siddhas* are considered, then 'they are beginningless and endless'. But when we say 'beginningless', it does not mean that they are '*nityasiddha*', because any soul which has attained the state of *siddha* even an infinity ago must have done so only through the *sādhanā*. Once the state of *siddha* is attained, it lasts forever.

Modewise, a *siddha* is said to be possessed of infinite number of modes of knowledge, infinite number of modes of perception, and infinite number of modes of non-heaviness and non-lightness. Thus, modewise, a *siddha* is infinite.

Now, we consider the issues raised in the *Journal*, in the context of the above discussion:

First of all, the implication of the text (from *Bhagavatī*) under discussion that '*siddhi*, i.e. *mokṣa*, is *nitya-siddha*, and hence cannot be an object of *sādhanā*', is not consistent. For, when it is said that *siddhi* is *śāśvata*, it means that the place where the *siddhas* stay is eternal and not that *mokṣa* is eternal nor that there is no need for *sādhanā*.

Now, we consider, one by one, the seven issues raised:

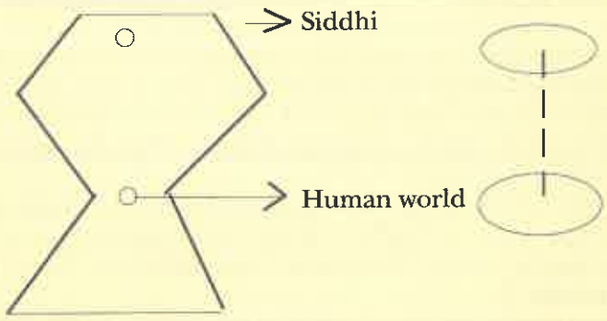
(1) The *Bhagavatī Sūtra* (*Vyākhyāprajñapti*) is the fifth *aṅga* which is one of the most important and authoritative Jain canonical texts.

(2) It, (the view given in the *Bhagavatī*), is generally accepted by almost all Jain thinkers. For example, see—

Uttarādhyayana Sūtra, 36/55–67.
Tattvārtha Sūtra, Ch.X.

(3) A *kevalin* attains omniscience (*sarvajñatā*) in the 13th stage of development called *guṇasthāna*, but attains *moksa* only after the 14th stage. A *kevalin* is he who has destroyed the four destructive *karmans* and has attained omniscience. The remaining four (non-destructive) *karmans* persist in the *kevalin*. When the *kevalin* annihilates these four *karmans* (after the 14th stage), he attains the *moksa*, or the state of *siddha* and reaches the *siddhi* (i.e. the place for staying) at the upper end of the universe to stay there forever. By remaining confined to a definite (finite) place the omniscience of the *siddhas* does not become limited; actually, it persists as before in the form of the knowledge of all substances and all modes of all space and all time.

(4) The *kṣetra*, i.e. the dimensions of the *siddhi* (or the *siddha-kṣetra*) remains always the same as mentioned in the *Bhagavatī Sūtra*. The reason is that the total area or the size of the *siddhi* is the same as that of the human world and only human beings belonging to the human world can attain liberation. (Actually, the place of *siddhi* is exactly parallel to the *kṣetra* of human beings situated in the middle world.



(5) *Āyāma-viṣkambha* means length and breadth or the diameter. The *paridhi* is the circumference which is always nearly three times the diameter.

According to mathematics—

Circumference = πd
(where d is diameter, $\pi = 3.14$;
in Jain works, however, the value of $\pi = \sqrt{10}$,
which is taken as 3.16.

(6) The statement that there was never a time when there was no *siddhi* means that the *siddhi* is situated near the upper end of the universe for eternal time—it is existing from beginningless time and will exist for infinite (endless) time.

(7) According to Jain philosophy, all *astikāyas* are related with the spatio-temporal aspects. As far as numbers or reason are concerned, they are not *astikāyas*. And, hence, spatio-temporal aspects do not necessarily apply to them. The Jain canonical literature elaborately deals with the concepts of numbers and reason.[2]

A COMMENT ON THE VIEWS OF DR MUKUND LATH

Although Dr Lath has correctly interpreted the text given in the *Bhagavatī Sūtra*, he, it seems, has not considered the issue in its totality. A special location or a particular place has no direct connection with the liberation of the soul. But because human beings are confined to the human world only, and can become liberated from there, it can relatively be said that particular place has some relation to the attainment of *mokṣa*.

Actually, whenever a soul becomes free from the bondage of all the *karmas*, it becomes liberated there and then. After attaining *mokṣa* in the human world, the soul soars up through its natural motion and gets freed at the top of the cosmic space.

Bhagavān Mahāvīra had attained omniscience during his lifetime and not after attaining *mokṣa*.

NOTES AND REFERENCES

1. The height of a *siddha* is two-thirds the height of the last body left before liberation. The minimum and maximum heights of human beings who can attain liberation are 2 *hasta* and 500 *dhanuṣya* respectively.
2. See, for example, *Anuyogadvāra Sūtra*.

ŚRĪ YUVĀCĀRYA MAHĀPRAJÑYA

Book Reviews

PIERRE DUHEM: *German Science,* Open Court, La Salle, Illinois, 1991 (Paperback).

Pierre Duhem, physicist and philosopher, was born in Paris in 1861 and died in 1916 when France was in the thick of World War I. In 1915, he delivered four lectures on German Science at Bordeaux University under the auspices of the Catholic Students' Association. These lectures have been translated by John Lyon of Michigan University (U.S.A) in this publication.

As both Lyon in his Preface, and Stanley L. Jaki of Seton Hall University in his Introduction, emphasize, the dates are important to understand the times and the context of these lectures; indeed much of it reads like a caricature of German Science some 75 years later. Nonetheless they are of interest for several reasons. First, Duhem's philosophical position, that the attempt to reduce Science to a rigorous deductive mathematical discipline is flawed and dangerous, is expressed with clarity. Second, in the years gone by, since these lectures were delivered, Science—Physics in particular—has seen spectacular developments and it is interesting to read Duhem in retrospect. Third, the very issue of whether or not there is such a thing as a science of a particular culture, German or other, and if there is, in what sense the distinction is to be perceived, is certainly of great interest.

It is difficult to take a book seriously if it begins one of its chapters thus:

> The German mind is powerfully mathematical but it is only that. This formulation sums up all we have said concerning the characteristics of the sciences of reasoning, the experimental sciences and the historical sciences in Germany. (p. 57)

So, why read it? Because it does have gems of wisdom that promise much. For example:

> There is no right to speak of an obscure thing except to clarify it. If the only effect of your verbiage must be to confuse things, be still. (p. 57)

More important, much the more so, the evils that Duhem sees in excessive abstraction of the deductive methods, deserve a look whether or not those evils are to be classed German.

The four lectures which form the main body of this book, but not all, are on (I) The Sciences of Reasoning, (II) The Experimental Sciences, (III) The Historical Sciences, and (IV) Order and Clarity, Conclusion.

There are two additional chapters: Some Reflections on German Science, and German Science and German Virtues, articles published in French journals.

Duhem draws as essential distinction in mathematics-arithmetic and geometry—between axioms and theorems, the consequences. Axioms are drawn from common knowledge based on 'intuitive certitude'. Theorems, often the result of a long sequence of reasoning, do not quite have the immediacy of a 'feeling' for truth. We only have a discursive knowledge of the truth of theorems. All minds are not quite equally adapted to the use of these two 'truths'.

With this beginning, Duhem sets the scene for his version of the quite different emphasis that 'German Science' is willing to place on methodology as compared to, say, French Science. The German is willing to suspend his contact with the reality of nature to pursue his deductive structure wherever it leads. The danger is that the contact may not merely be postponed. It may be lost altogether. An extreme perversion could lead to a view that if reality does not conform to the beautiful deductive edifice, so much the worse for reality.

Duhem likens the slow and sure progress of this deductive method to the progress of a mule coming down from a mountain on a steep and slippery foot path: the follower, irritated at the slowness, takes advantage at the first widening of the foot path to overtake the mule.

Perhaps the most fascinating development in mathematics is the marriage of the ancient discipline of geometry to algebra; the origins of the union are obviously traceable to Descartes. The number of mathematicians who contributed to this is large but perhaps the names of Gauss, a German, and Cauchy, a Frenchman stand out. Duhem sees in the algebraization of geometry, precisely the alienation of the intuitive faculty that he values. He goes on:

> The only axioms which algebra needs are thus the axioms on which arithmetic is based, that is to say, a quite small number of extremely simple and glaringly obvious propositions concerning the addition of whole numbers. We should not be surprised that the German mind has passionately and successfully given itself over to algebra. (p. 14)

Still, Gauss, whom Duhem admires, is exempt from his ire. That wrath is particularly reserved for Weierstrass, whose work on theory of real numbers, tests of convergence of series, elliptic functions and on isolated essential singularities are text book stuff. But, even if Weierstrass did represent the quintessence of the evil of an over deductive German style, is that all that disastrous? Let us consider alternative views. On the subject of analytic functions of complex variables, here is a text book exhortation: 'Rigour in this particular subject is actually useful.'[1] But then, do we view Euclidean geometry in its pristine abstraction? Penrose, in a recent book,

writes:

> Why do I refer to Euclidean geometry as a physical theory rather then as a branch of mathematics? Ironically, one of the clearest reasons for taking that view is that we now know that Euclidean geometry is *not entirely accurate* as description of the physical space that we inhabit.[2]

I have juxtaposed these quotations because they reflect complementary views on rigour; the significance of deviation from a theoretical structure that nature exhibits emerges precisely from that rigour which Duhem deplores.

The second lecture on Experimental Sciences begins with an excellent description of the actual way that experimental programmes are related to theory in contrast to the quite fictitious ideal that even a slight deviation from the expected, signals the end of a theory. (Popper's falsification was to come later.) The essential ingredient of this practical relationship between experiment and theory is what Duhem calls 'good sense', an undefinable quality that a great experimentalist uses to weigh the deviations and assess their importance.

From this stimulating *hors d'oevre* it is business as usual. Duhem's German is not intuitive, not capable of good sense and hence he comes across few Germans among the creators of Physics, Chemistry and Biology. Should you be thinking of the great developments in Chemistry, of Kekule and Fisher or, in Physics of H.R. Hertz and his electromagnetic waves, or of Kurlbaum, Rubens, Lummer and others on black body radiation (all this well before Duhem's lectures) Duhem has his counter punch ready. 'It has often been noted that the German, who is little capable of new ideas, was the most skillful at bringing together developing inventions which came from elsewhere.' (p. 35)

Charles Darwin was one whose single minded devotion to observation Duhem admired. He selects the German Haeckel's views on Darwin for exemplifying the shortcomings of German science. Haeckel, not grasping the strength of Darwin's theory, upbraided it for seeking to overthrow a then current biology, however weak its status, until a better one could be found. Duhem is amused. 'How marvellously relaxed is Haeckel's attitude to experience.' (p. 39) Well, which experience? Duhem's good sense should have guided Haeckel and did not.

By contrast, the Frenchman Henri Fabre accumulated a pains-taking collection of facts of nature that seemed to counter Darwin, who, it seems, admired Fabre. Duhem remarks on Fabre's labours: 'Of the Darwinian hypothesis, this work left barely anything but debris' (p. 38). Indeed! What then, one wonders, resurrected Darwin? That question and that alone should have been the main theme of Duhem's concern. Alas, his patriotism deflects him.

The Historical Sciences, the subject of the third lecture, makes strange reading now since much of what he admires is out of fashion. Look at his

hero, Fustel de Coulanges, declaiming, 'We demand of it (History), the impartiality, which is the chastity of history' (p. 43). The picture of your historian as the examining magistrate who, by prudent and patient examination draws out of the witness (historical evidence) precise, truthful and useful information is not the one E.H. Carr paints.[3] But Duhem has other virtues in mind, those of an intuitive mind, one that has only good eyesight and can take in all the principles and an accurate mind not to draw false deductions. The German mind? 'Myopic', says Duhem, continuing his metaphor.

In this infantile game of looking for vices and calling them German, there do appear provoking reflections. 'There is not, there cannot be, any historical method', says Duhem (p. 44).

It is not just that available evidence is already selective. ('The most veracious witness does not report everything he has seen.' p. 46) Always, Duhem asserts, the human will is inserted between causes and it can never be a purely deductive discipline, that passion of the German mind. But if that were so, what is this 'chastity' of history that Coulanges so poetically demands?

The fourth and concluding lecture is on 'Order and Clarity' and at least here, one would think, the German had something going for him. But then, as Poincare pointed out, even the development of mathematics required the felicity of interaction with nature. How close must that interaction be? The problem, as usually stated, is that the common sense of science is not all that common and even quite abstract and remote mathematical developments have found their connections to science.

From this sublime debate, on the value of mathematical fertility, Duhem descends to the very depths of caricature. We have the parable of the potato knife. A German doctor in Pasteur's laboratory, it seems, refused to use any other than a potato knife to cut slices of potato on which to cultivate microbes. Like the boy who stood on the burning deck, German science could not move without a potato knife. What could we say—except that we hope that the story is not apocryphal and have a good laugh.

Perhaps it is in the last two chapters that one begins to understand the concerns of Duhem which he could have elaborated upon if his obsession about German science had been exorcised. As mentioned, Duhem talks of the algebraic mind as the epitome of the purely mathematical. The 'truth' of geometry, on the other hand, is not just in the impeccable rigour from which theorems emerge but rather in the agreement between the propositions and that extended experience called common sense. It is that remarkable agreement that makes Penrose class Euclidean Geometry as a '*superb*' theory. But the question is: is there room for mathematical imagination to construct a different geometry not immediately 'tactile' or in contact with experience? That was what Gauss, Bolyai, Lobachevsky and Riemann did. Riemann's rigorous algebra shocked common sense. The

'denouement', that such a geometry is of the physical world was to emerge later, with Einstein and Minkowsky. For Duhem, this mathematical development, through algebra, assigns extremely unequal shares to the two methods, algebra and geometry. 'What of it', one may ask. Pure geometrical techniques are, perforce, two or three dimensional demonstrations and every step is in a fair degree of contact with the intuitive mind. Multidimensional algebra distances itself; and that, one would argue is precisely why rigour and delicacy should be valued. Are those qualities excessively honed in what Duhem sees in the German mind? It is at least debatable.

By 1915, when Duhem delivered these lectures, the Special Theory of Relativity had been around for a decade and, gradually, had become acceptable despite reservations in philosophical circles. The real revolution, the strange world of Quantum Mechanics was to come later. As luck would have it, much of this was to emerge from that 'German mind' that Duhem despised. Poor Duhem could not be faulted for not being prophetic. On the other hand, to have ignored Kirchhoff's major contributions and to choose some quite unimportant mannerisms of presentation of a mathematical work of his, requires some degree of myopia. When I was an under graduate student of physics, preoccupation with the subject of black body (cavity) radiation and the theorems deduced thereof, seemed strange. What was all the hullabaloo about? One cannot but admire the perspicacity of the chief actors in recognising the black body problem as fundamental. And that was precisely because of the generality and rigour of those theorems some of which were due to Kirchhoff.

The pre-eminence of Germany in the field of Organic Chemistry in the 19th century is well known and is in striking contrast to the state of German science in other fields. For Duhem, this has a simple explanation, namely that this development dates from the moment the atomic notation was born from the notions of chemical type and valence. (p. 108) This notation, he continues, permitted the use of algebra and the mathematical German mind produced innumerable shoots of extraordinary vigour.

The differences in development of not merely various branches of chemistry but of other sciences in Europe at the time of the later industrial revolution make a fascinating study but it is unlikely that they have as simple an explanation as Duhem offers, that they are attributable to the nature of the German (or other) mind. German industry was far behind some of the other leading nations and the status of organic chemistry cannot, probably, be attributed to the demands of industry. Perhaps organic chemistry did offer a richer pasture, in the prevailing constraints, for asserting national pride than other fields. At any rate, German dye stuff industry, its pharmaceuticals, etc. grew rapidly. A certain degree of cultural attitude towards work and the making profit unquestionably played a part in all this. Duhem sees this as a 'moral' issue. The German adores work of its own sake, would labour meticulously with obedience

with the same fervour that characterises religious orders. It is, in its methodology, that the Germanness of Science is distinguishable, for Duhem.

But a much more incisive question is whether current science can itself be accused of over deductive mathematization, ostensibly distancing itself from common sense and whether our very perception of Science has undergone changes in the light of developments of the twentieth century, especially in the physical sciences. One cannot but help feel that it is this that would have engaged Duhem, had he lived to see these. What are the main ingredients of these developments?

It took centuries for man to come to terms with Science as a description of cause and effect, a chain by which causes can be discerned from effects and effects can be predicted from causes. If at all the idea of chance and its quantifier, a probability calculus, had emerged already, it was only as a tool to gloss over inadequate knowledge of causes, an inadequacy which nevertheless permitted prediction within limits. The idea that chance plays a fundamental role in phenomena of nature belongs to this century, and the philosophical questions raised are by no means settled. Indeed the abstraction of space-time geometry, following Einstein, is not all that revolutionary any more and, one suspects, what Duhem calls common sense and intuition are only a readjustment of man's experience at another level. But the idea of chance, the vagaries of observable characteristics of nature responding to nothing more than our cognition—these are developments which do shake the foundations of the scientific method. Some take the attitude that the role of Science is only to systematize and to create models that act as *Predictors*, albeit with limits of precision that cannot even be exceeded in principle.[4] Even Einstein, whose relativity violated the common sense of Duhem, was quite uncomfortable with this quite weak link with reality. No one can deny that such a question will *not* be settled by mere mathematical rigour. On the other hand, the sort of observations guided by theory that will enrich science cannot be simply called common sense, the senses required being quite uncommon; nor does it help to call it intuition. After all the common sense and intuition of today are quite different from ancient times.

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DOUGLAS B. RASMUSSEN and DOUGLAS J. DEN UYL: *Liberty and Nature: An Aristotelian Defence of Liberal Order*, Open Court, Illinois, 1991.

There was a time when Sir Isaiah Berlin asked the question: Does political theory still exist? This question by one of the great political theorist of our times created a disturbance in the minds of the practitioners of the discipline about its future. The question itself was a result of a series of developments that had taken place in political theory since the Second World War. In those days there was a massive onslaught from those who conceived of politics as a science. In America most of the political theorists or philosophers were outside the political science departments. But in the last two decades, the wheel has turned the full circle with the re-emergence of political philosophy. Rawls, Nozic, MacIntyre and a host of other seminal thinkers have once again drawn our attention to the basic issues and categories of political life.

The resurgence of political theory is primarily focussed on liberalism, which does not, however, mean that there was no Marxist political theory. But, most of it was in the tradition of the sacred and the profane. People like Jürgen Habermas were exceptions. Within the liberal fold the debate has largely been around the reassertion of the principles of liberty and natural rights. Following Hobbes, Locke and Hume, most liberal thinkers have viewed the individual as nothing more than a creature of reason and desire with all the complexities of human nature reducible to one or the other of these two basic features. The natural extension of this in the economic studies was the principle of *homo economicus*: viewing individuals as pursuing their rationally determined economic interests where the society or the State provides the minimum principles to regulate their interactions so that conflict is avoided and there is peace in society. Liberty, according to this view, is important because since all desires are essentially equal, none is to be given priority over another. What is necessary is to make room for the fulfilment of different desires.

In the last few decades, this view of what the authors call 'a thin theory of the person and a thin theory of co-operation' has been contested by those who subscribe to the classical Greek view, particularly that of Aristotle. The authors term this view as that of 'a thick theory of the person and a thick theory of co-operation'. Thinkers like MacIntyre are dissatisfied with the foundations of liberalism and often with the conclusions of liberal political theory. MacIntyre is against indisciplined pursuit of desire, industrialization, technocracy and commercialism. He seems to derive his ideas from Aristotle. The communitarians are convinced that liberals do not have proper understanding of social cohesion; their ideas have very little bearing on the lives these individuals actually live in practice or the rights they actually enjoy.

The authors of the volume try to steer clear of both these options in search of a liberal theory based on Aristotelian foundations. They select

one of the two remaining alternatives, one of these alternatives is to have a thin theory of the person and a thick theory of co-operation, an alternative adopted by modern liberals. They see the person much in the same way as classical liberals but since they distrust market mechanism, emphasis is placed upon the State-imposed solutions. The other alternative is the theory of a thick person and a thin theory of social co-operation. The authors seem to subscribe to this view. In the first chapter, they advance the argument that Aristotelianism, as against Aristotle, has not been philosophically defeated. In the second, they try to outline and defend an Aristotelian approach to ethics. In the chapter that follows, there is a discussion of rights and in Chapter IV, of the common good and the political community. Chapter V attempts to link certain features of a commercial republican order to Aristotelian themes. The authors try to avoid the reductionist tendencies of classical liberalism while at the same time accepting the minimalist tenets of liberalism.

The main difference between the liberal and the communitarian views seems to veer around co-operation. While the liberal political tradition wants to domesticate conflict by emphasising peace, the classical political tradition does so by insisting that good moral character alone can provide true standards of co-operation. A mere reconciliation of desires and interests can never solve the problem of co-operation.

The authors are not happy with the idea that links the attainment of social co-operation to moral perfection. They argue that there is no determinate end. For the most part the individual is responsible for his or her own life, and is, therefore, entitled to the consequences of the choices he or she makes. Morality is not absolute. An individual will be rational to the extent that he acts according to his own commitment to liberty. And yet every individual should have natural right to try to find moral significance. Liberty and natural rights provide mechanism which helps us in the process. The beauty of the classical tradition is that it formulates moral principles whose degree of determinacy is appropriate to the variety of circumstances to which those principles are to apply. The authors obviously do not find any contradiction in combining the two traditions. Natural rights and liberty are necessary because a person must still use his own intelligence and choice to fashion worthwhile existence. To quote: 'Presence in a community does not remove the necessary connection between self-fulfilment and individual responsibility' (p. 134). The solution is to reintroduce the moral aspects of liberalism to it as a purely procedural mechanism.

The recrudescence of the idea that the individual should aim at moral perfection is appealing. But how do people decide in a tangle of differing moral opinions and practices? How do we decide what relative weight each opinion will have which the authors concede are irreducibly plural? The authors, for instance, do not seem to take into account the question of what happens if in the name of liberal rights private enterprise is shielded

against public good. They also do not explain how to incorporate the ideal of moral perfection in the actual practice of liberal societies. It is alright to say that rights and liberty are necessary conditions of moral perfection. But practical issues are far more complex than conceptual and theoretical ones. The real crux of the question is how do we make rights of all consistent with moral perfection. This is undoubtedly rooted in the notion of self and its identity and autonomy which the authors clearly lack.

It is indeed doubtful whether the ideal of moral perfection can produce adequate protection for the individual rights and liberty associated with liberal society. The authors do not give a clear account of the number or kinds of rights which will provide goodness. There is also no clear account of the society which will protect these rights.

The specific question is not whether rights are necessary for pursuit of moral perfection but what specific rights would protect moral perfection. Or, alternatively, what are the aspects of moral perfection which we would wish rights to promote. There is indeed bound to be sharp disagreement about the degree to which certain notions of rights and moral perfection can be wedded. In certain situations society dedicated to the notion of moral perfection may be inimical to liberal rights because the concept of moral perfection here is defined by society, and if the society is totalitarian it is difficult to escape its clutches which become the final arbiter in case of conflict. In case it is left to each individual to decide, there is every danger of relativism and moral anarchy. Different people have different perspectives, so they will never give the same answer to the question about what is right. Aristotle would have no difficulty with this provided it is not left to everyone to say so. He does not leave it to everyone to decide: only the virtuous decide. The instructions and admonitions of the old and the wise also help. When Aristotle wants to demonstrate that virtue is a mean between extremes he looks at particular virtues and vices in different contexts. But this advantage is not available to these authors for, unlike Aristotle, they seem to lack a theory of tradition and continuity. Aristotle is full of general theory and particular accounts of its exercise in tradition.

It would, of course, be unreasonable for us to expect that the authors would resolve all these difficulties which have baffled us for the last two decades or more. It is surely enough that they have raised new questions.

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ANINDITA NIYOGI BALSLEV: *Cultural Otherness*, Indian Institute of Advanced Study, Shimla, in collaboration with Munshiram Manoharlal, New Delhi, 1991, Rs 80.

This slim volume is a set of six letters between Anindita Balslev, Fellow, Indian Institute of Advanced Study, and Richard Rorty, the widely-discussed American thinker and Professor of Humanities, University of Virginia.

Rorty drew attention by his unapologetic, hard-hitting views on what he regarded as the unjustifiable claim of traditional philosophy to be the privileged repository of truth. Pressing for an anti-essentialist and pragmatist stand on the issue, he prescribed the 'conversation' approach. Depriving philosophy of its 'special' status, Rorty seemed to have signalled its end. That, it did not happen, is evident from the plethora of reflective writing that has continued to flow. Rorty's own tirade against foundationalism has provided vibrant issues, some of which constitute the subjects of the letters in the present collection. The problem of the 'other', 'authentic discourse', and 'interpretation' stirred Balslev into mind-searching soliloquy which she turns over to Rorty for his comments. What makes this exchange interesting is that, Balslev, though not a foundationalistic fanatic, is yet unable to accept Rorty's non-chalance.

The exchange is initiated by Ms Balslev. We learn that the problem of the Other has been the recurrent theme of numerous discussions and debates today. Ms Balslev and Richard Rorty had themselves been participants at the East–West Philosophers Conference held in Hawaii in 1989. In the present collection, Ms Balslev by her intense reflection on the issue of the Other, releases a plethora of issues, fascinating in its range, and each one deserving of full enquiry. She encounters us (and Rorty) with the question of the role of technology in projecting the problem of the Other, the possibility of authentic discourse over cross-cultural dimensions, the issue of difference and plurality, the non-static character of the Other, her critique of Eastern and Western attempts at understanding each other, Rorty's notion of the 'exotic' and his justification for choosing not to have a program. It must be emphasised that in writings of this genre one must not expect in-depth treatment. The value of the collection lies in the variety and range of issues it brings into focus.

The book should be interesting for students of philosophy as well as of social sciences. Balslev has projected the problem of the Other in a manner different from its earlier *avatars* in philosophical writings, such as the problem of other minds, the one and the many etc. Ms Balslev has also included a caveat against the not-seldom-found simplistic tendency to think that all of Western philosophy can be described by a specific set of attributes, while with another set the whole of Eastern philosophy could be characterised.

Ms Balslev's soliloquist style, no doubt facilitates enquiry and reflection, but it also tends to verbosity. Editing the letters meant for publication would have helped. Rorty's replies in contrast, are crisp, clear and precise, and may be said to reflect his uncomplicated approach to the phenomenon of the 'other'.

Bombay SURYAPRABHA SHASHIDHARAN

N.K. DEVARAJA (editor): *Philosophy and Religion*, Indian Institute of Advanced Study, Shimla, in association with Indus Publishing Company, New Delhi, 1989, pp. 107, Rs 100.

The book is the second volume in the series IIAS occasional papers under the general editorship of Prof. Margaret Chatterjee. It is a collection of six research papers by different eminent scholars and reflect their variety of approach towards the problems relating to Indian Philosophy and Religion. The book contains a short Foreword by Prof. Margaret Chatterjee and a critical Introduction by Prof. N.K. Devaraja.

1. 'Towards a Philosophical Anthropology from a Vedāntic Perspective: A Hermeneutical Exploration': DEBABRATA SINHA

According to Prof. Sinha there are two different perspectives on the human condition, viz. 'the ātman perspective' of Saṅkara Vedānta as representing the Indian perspective and the Western perspective of 'contemporary philosophical anthropology'. In view of the observations of certain western contemporary Indologists that in India there is no tradition of explicit philosophical anthropology comparable to that in the West, Prof. Sinha, in this long article, proposes to explore the question whether 'in-depth understanding of Self *qua* Ātman, i.e. in the perspective of ātman, could provide a thematically adequate picture of human reality.' And, in this connection he raises a very important question of the relation of Ātman as pure *cit* or transcendental self to the Ātman as empirical self or jīva.

Prof. Sinha observes that there is a 'dilemma' for Husserl to relate the transcendental ego to the factual ego and, thus, there arises a 'significant problem of mediation, a link, between the transcendental and empirical subjectivity'. A similar situation, but with a stronger 'anthropological' accent also appears in the philosophy of more recent existential-phenomenological French thinker Paul Ricoeur, who, on the general Biblical background of evil, introduces the concept of 'fallibility' and holds that man's constitutional weakness and fallibility lies within this 'mediation between the pole of his finite and that of his infinite'. Same is the case, he says, with the Indian tradition, where, right from the Upaniṣads, man's existence as a unity is 'essentially and functionally grounded in the

spirit' or Ātman, which, as pure *cit*, is transcendental in character. And, here, Prof. Sinha brings in the Vedāntic concept of '*Sākṣin*', which 'stands, in a way, in between the Brahman, on the one hand and *jīva*, on the other, so far as it is on the threshold of jīvehood on the culminating point of individuality, and yet embodies the focus of transcendence.' This focus of transcendence, however, cannot be located in the Brahman, which is *nirguṇa* in character, but is 'to be indicated immanently in individual consciousness itself'. Phenomenologically, therefore, it could be described as a unique case of transcendence, i.e., "a transcendence in immanence'. Though in the Advaitic metaphysics, Brahman being the reality of the world, the 'question of the ontological (not just 'ontic') status of *Sākṣin* does seem to pose a puzzlement even to the Vedāntic doctrinnaire', but 'the thinking behind it all appears", says Prof. Sinha, 'to centre around the basic insight into the human condition as the unique meeting ground of the natural-empirical order and the over-natural, over-empirical order.'

The concept of *Sākṣin* being a part of the concept of individual self or *jīva*, Prof. Sinha considers the nature of *avidyā* or *ajñāna*. Understanding hermeneutically, *avidyā*, according to him, does not mean 'absence of knowledge', since it does not arise 'from the phenomena of erroneous perception'. Therefore, it can neither be categorised as real, nor as unreal, nor both as real and unreal, but as '*sadasadvilakṣaṇa*'. Prof. Sinha, therefore, says that 'As such the positive essence of *cit* and the anoetic movement of *avidyā/ajñāna* would not cancel each other. . . . Rather the two are in a unique way coeval, though mutually contrary.' Thus, he says further, 'The situation in consequence is not to be formulated as one of *cit* plus *avidyā*, but rather one of *cit* cum *avidyā*", i.e. *cit* in integral relation to *avidyā*. And thus, this comes up for serious investigation and calls for "a new methodological framework and conceptual scheme.' Prof. Sinha, however, does not suggest any such scheme and leaves the matter open for scholars to think. Such a scheme would, then, be an Integral Advaitism, a type of which we find in the philosophy of Sri Aurobindo to some extent.

2. 'Parfit and the Buddha: Why there are no People': Jim Stone

Prof. Jim Stone poses a very important and interesting metaphysical problem of the identity and the reality of the person. While, on the one hand, there is the Realist for whom a person is an ontological reality or identity, on the other hand, there is the Empiricist or the Reductionist, Hume, Parfit, Buddha, for whom a person is nothing but a series of different but similar bodily and mental states only. Arguing tightly, Prof. Stone rejects both and stands for 'Eliminativism'.

With his own arguments and with the popular arguments of the Reductionists, he shows that 'Realism verges on absurdity'. But he does not remain a Reductionist. In fact, the heart of his article is his detailed and close examination and rejection of Reductionism. He examines at length two most forceful arguments of Parfit, viz. the 'spectrum argument' and

'the argument from fissioning', and finds them either as supporting Eliminativism or as circular in character. Thus, he concludes that 'there are no Persons'. But, since the person is there pragmatically or practically, Prof. Stone finds himself in a strange situation when he says in the end of his paper, 'I suspect this is the truth about us, that such a position is the inevitable consequence of science and empiricism. But how one lives with the truth I don't know.'

3. 'The Genesis and Nature of the Divine Name': S.G. Tulpule

The article is illuminating in the sense that Prof. Tulpule raises a problem 'How and Why did the single syllable Om' of the Upaniṣads 'differentiate itself into different names like Rāma, Kṛṣṇa, Hari and so on' in the medieval times. On the basis of the writings, mystical experiences and the practices of the recent mystico-philosopher Prof. R.D. Ranade, he suggests the answer that the different names of God are revealed in the form of visual and/or auditory mystical experiences during meditation to the mystics and Om is just one which was similarly revealed to the Upaniṣadic seers. He says, 'So it is quite plausible that Om was just the beginning of the auditory experiences which the Upaniṣadic mystics had and that it was followed by many more in later times.'

This view, though perhaps not acceptable to the Upaniṣadic scholars on account of the exclusive spiritual and philosophical significance attached to the word Om till now, is very significant since the medieval saints have attained realisation through the contemplation of different names of God and have also imparted such different divine revealed names to their disciples,—a NĀDA-BINDU YOGA.

Discussing the nature of such a divine or revealed name of God, Prof. Tulpule says that such a name is laden with divine power and so meditation on it (*nāmasmaraṇa*) mystically leads to the realization of Brahman, ethically transforms a sinner into a saint and philosophically resolves the conflict between *Saguṇa* and *Nirguṇa* Brahman. The whole article, in fact, is based on the writings of Prof. R.D. Ranade. The reviewer himself had the privilege of staying at Prof. Ranade's āshram at Nimbal for a long time and had seen the sādhakas meditating on different names of God and attaining spiritual experiences.

4. 'The Heart of Religion: A Sufi's Thoughts on the Relations between Religious Communities': Hugh Van Skyhawk

The article is based solely on the booklet '*Dharmace Marma*', i.e. 'The Heart of Religion' by the contemporary Indian Biyabani Muslim Sufi Sheikh Abdul Rajhaksah Biyabani and Prof. Van Skyhawk simply quotes at length from this booklet on every point. The intention is to show that in spite of the outward differences between the religions, especially the religions of the Hindus and the Muslims, how the Biyabani Sufi, using the different metaphors of the sub-divisions of a city, state, country, the world and

finally the universe, sees the 'harmony' and 'ultimate identity' between them. From the point of view of communal harmony between the Hindus and the Muslims in India, and, from the point of view of the unity of the mystical part of the different religions, the writings of the Sufi are really interesting and inspiring, especially in the modern context.

5. 'Religion, Virtue and Spirituality': M.M. Aggarwal

In this article, Prof. Aggarwal attempts to show what religion, morality and spirituality essentially mean and how are they related to each other. faith, worship and obedience, he says, constitute the three 'fundamental concepts' in the structure of a religion, whether theistic or non-theistic. Further, while for religion it is 'very difficult', though not 'logically necessary' to ignore ethics, but the latter does not presuppose the former. So far as relation with spirituality is concerned, a religion can 'easily be divorced' from spirituality, since while religion relates to the phenomenal existence, spirituality relates to the transcendental reality. But such a divorce does not exist between ethics and spirituality; for 'selflessness' being the essence of an ethical life and 'going beyond phenomenal selfhood' being the essence of a spiritual life, both ethics and spirituality 'present two different ways of looking at the same reality', and 'love', being the true name of selflessness, is 'the link between the two'.

Prof. Aggarwal's views about the relations between religion, ethics and spirituality are quite thought-provoking, but one may not agree with them. For religion has been defined differently by different scholars, and, in the Indian context, religion comprehends the total life of an individual, the socio-ethical, the ritualistic and the mystical or spiritual. One may also differ from Prof. Aggarwal's view about the relation between ethics and spirituality. For ethical selflessness and ethical love are quite different from spiritual selflessness and spiritual love, since, as Prof. Aggarwal himself holds, ethics is related and limited over to the phenomenal existence, spirituality is related to that which transcends the phenomenal existence.

6. 'The Humanistic Approach to Hindu Religio-Philosophic Thought': N.K. Devaraja

The intention of the author is to show that it is not correct to hold that 'humanistic elements are not present in Hinduism'. By Hinduism, Prof. Devaraja means 'philosophical Hinduism in general and, within it, the Upaniṣadic Vedāntic form in particular'.

The humanistic attitude, for Prof. Devaraja, implies three attitudes, viz. 'interest in and concern for man's life here on earth, a new sense of dignity and greatness of man as the only known conscious and creative being in the universe and the belief that man has to depend on himself, his knowledge and his good sense or wisdom in solving the problem of his life and existence'. He does not favour a humanistic viewpoint which repudiates

religion, for such a viewpoint involves 'the denial of continuity in the growth of human culture'.

According to Prof. Devaraja 'The metaphysical world-view of philosophical Hinduism, particularly, in its Vedantic form, has a definite humanistic bias.' For the Upaniṣads repeatedly exhort us to investigate the nature of the Ātman, the Hindu philosophical systems conceived individual souls to be unborn and immortal, the law of karma and the doctrines of liberation, by implication, assert the independence of the individual souls, and it is the human being who alone can attain and enjoy liberation here on earth, the *jīvan-mukti.*

Further, while the modern existentialists and the Upaniṣadic seers have equally 'stressed the need for inwardness', the former, under the 'pressure from an external situation of conflict' remain pessimists, the latter, 'envisaged a life of everlasting contentment and joy'. However, Prof. Devaraja holds that the 'Upanisadic view of the Self suffers from an obsession with the category of Substance', and, therefore, 'a modern humanist may profitably substitute that view by a conception of the cultural self, the symbol-bound common heritage of mankind which comprises the visions of the poets, the wisdom of its philosophers and sages, and the reflective achievements of its scientific minds'.

The book is worth reading by scholars in the different fields of Indian philosophy, religion-mysticism and humanism, etc. The printing of the book is very good.

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Jeh-Tween Gong: *The Divine Constitution*, Adams Press, Chicago, Illinois, 1992, pp. ii–214

The author, Dr Jeh-Tween Gong, proposes, in this book, to introduce a new conception of God. In his search for this new conception he is guided by the principle of unification, which implies that the absolute and highest reality must be inclusive of all facts. The totality of facts includes physics, mathematics, social sciences, religious concepts, etc. The higher a principle is, the more inclusive it is of facts. God is thus the highest inclusive principle.

The above considerations lead Dr Gong to declare God's essence as 'the union of nothingness and infinity'. As the unborn primal reality God is nothingness. But this nothingness contains an infinite possibility. As a result, it creates the mortal world. In Gong's technical parlance, God, the highest unity, is represented as the 'perfect symmetry'. But this perfect symmetry of 'Immortal nothingness (A) must go through the mortal sphere (B, the creation) and then reunite with the immortal infinity (A,

which cannot be distinguished from the nothingness, A). In other words, the perfect symmetry (the immortal sphere) must be broken down by a symmetry breaking process, and this process creates the mortal universe and its symmetry (ghost) partner. In short, God has no free choice of not creating, 'Creation' is God's essence.' (p. 49) God, in Gong's opinion, is neither a state nor a being, but a process. In fact, 'God is this infinite recursion from absoluteness (the immortal sphere) to relativity (the mortal sphere) and then back to absoluteness.' (p. 50)

All of God's attributes and essences, Dr Gong holds, show up in the form of paradoxes. And 'every paradox', he claims, 'points out a higher truth which transcends the paradox'. (p. 37)

Dr Gong starts by discussing how certain mathematical paradoxes (e.g. Cantor's paradox and Russell's paradox) are resolved by unifying them in a higher truth or higher symmetry structure—the absolute totality (paradoxes result from the breaking of higher symmetry). Then he moves on to show how certain paradoxical conceptions of God's nature can be reconciled by conceiving of God as the all-encompassing Absolute. He cites three such paradoxical conceptions of Godhead: (i) God is both transcendent and immanent; (ii) God is both nothingness (the primal unborn) and infinite (infinite in time, space and possibility); (iii) God is both omniscient and yet impassible (He knows all our suffering but is yet not moved by prayers).

The nothingness-infinity paradox, Dr Gong tries to solve, by conceiving God as the all-inclusive Absolute. As Absolute God is uncreated and, hence, zero or nothingness, yet, this nothingness is not non-being. As not being anything specific, God is infinitely rich in possibilities. Thus God transpires to be the symmetry (which, as a higher truth, transcends the paradox) of nothingness and infinity.

The omniscience-impassibility paradox is resolved by conceiving of God's will as absolute, all-inclusive and inescapable. The omniscient one knows our future (suffering and random acts) and is concerned with our suffering and our affairs. But, submitting to His will is the proper way to communicate with Him, and not begging to escape (by prayer) from the inescapable destiny. (Chapter XII, Providence and Divination, p. 179)

The transcendence-immanence paradox is also resolved by conceiving of the inclusiveness of God in such a way that 'God is present throughout all and God's spirit does not exist apart from human spirits.' (Chapter VIII, The Origin and Rise of Consciousness, p. 93) Creation really is the spontaneous recursion of the Absolute into the realm of relativity. Creation usually implies the moving of the universe from the past to the future. 'Now God is immortal and eternal. So, there is no past, nor future in the eyes of God. . . . Thus no energy is needed to move the universe from t_1 to t_2.' (Chapter VII, p. 95) All this implies that the universe is not apart from God. It is only the manifestation of the eternal as a relative and temporal (in the human time-bound consciousness).

Apart from presenting his own perspective of the essence of God the author also discusses the methodology (Chapter II, Knowledge and Truth, pp. 15–31) to understand God, the language by which God's nature is conveyed (Chapter V, The Language of God, pp. 61–70), the connection between moral laws and God (Chapter VI, The Moral Truths, pp. 77–85), and the similarity of process by which the macrocosmic universe and the microcosmic biological world works (Chapter X, The Triune Universe, pp. 131–135). The book also discusses Taoism, Buddhism, and Christianity and shows how each of them, in spite of its significant insights, ultimately fails to give us a proper understanding of Godhead. [According to his self-proclamation, he 'is the only one who is able to reveal the true God'! (p. 200)]

Inspite of bringing to light many important lively issues of both traditional and contemporary theology and philosophy, the book suffers from certain shortcomings which tend to undermine the value of the book. Throughout the 214 pages of the book, the author never bothers to give any exact references to the texts he is quoting from. Neither does he care to add any index at the end. One is naturally driven to think that the book is meant for the non-scholarly readers. Yet, this is far from the truth. The book abounds in technical discussions in the field of higher mathematics and modern elementary particle physics. (These discussions would make sense only to the one having the requisite expertise in these fields.) The book also introduces specialised discussions on aspects of Christian, Taoist, and Buddhist theologies. Unfortunately, specialised scholars would not really benefit from the book either. The book's discussion on these specialised areas are far too sketchy, and one is likely to have misconceptions (rather than proper grasp) about topics contained therein. A rich tradition like Buddhism—containing an enormous mass of Hīnayāna and Mahāyāna literature—is summarily dismissed in the span of just 16 pages. These pages are likely to generate certain wrong notions about Buddhism, such as: early Buddhism embraced a form of theism and that it accepted the doctrine of permanent souls.

Let us have a look at some of the other shortcomings of the book. The author tends to give radically changed arbitrary interpretations of age-old philosophical and theological concepts to suit his own purpose. This not only undermines the worth of some celebrated traditional doctrines, but also weakens some of the author's own arguments. I shall elaborate below the shortcomings.

We will start by Dr Gong's presentation of the paradoxes. The paradoxes cease to be paradoxes because of Dr Gong's continuous reinterpretation of traditional concepts. Take the nothingness-infinity paradox. Nothingness is, according to Dr Gong's earlier admission, zero. (p. 48) However, later on, (p. 50) Dr Gong comments: 'nothingness is as rich in possibilities as the infinity'. In that case, however, nothingness does not remain the contrary of infinity, and the paradox ceases to be a real paradox.

Again, omniscience-impassibility is a paradox if God is really moved by human petition and changes what is in store for the petitioner. But Dr Gong interprets destiny as God's absolute and inescapable will, and serving God's will by faith as fulfilling a man's destiny. (p. 179) And yet, if God's will is absolute and inescapable, then God is not really moved by petition. And the impassibility paradox ceases to be a real paradox.

Another example of Dr Gong's arbitrary changing of the traditional concept is evident in his discussion of the concept of Free Will. Gong admits that freedom is a necessary moral postulate. (p. 81) But he reinterprets freedom: 'We are permanently confined in God: so we have free will and free choice. God allows us to do whatever we choose and please because there is absolutely no way that we can get out of His hand.' (p. 84) But, then, if everything we do is happening within God, everything we do is really godly. And God being the source of moral laws, nothing we do goes against God's will. Every action transpires to be morally good. And in the absence of the good-bad distinction, the postulate of the Freedom of Will is rendered superfluous.

In the chapter, Moral Truths, Dr Gong arbitrarily redefines prescriptive laws. He says: 'the difference between the prescriptive truths and descriptive truths is very superficial. . . . The divine law is the law of all laws, of either descriptive or prescriptive laws.' (p. 80) Yet, the arguments he presents in support of his thesis is extremely weak: 'A moral truth violator will be punished by the underlying physical laws slowly but surely.' (p. 81) However, statistics of punishment for violators of moral laws can hardly be regarded as a demonstrative proof. His own statements at places ['Moral truths are not derivative of physical laws. They are legitimate in their own right.' (p. 81)], in fact goes against his thesis.

Sometimes Dr Gong raises important questions, but ultimately fails to answer them, because of his lack of awareness of the precise point at issue. For example, on p. 51 he asks: 'Why shall this infinity and nothingness symmetry break down into the immortality spheres and mortal world instead of taking an eternal nap?' His answer suggests that God, the perfect symmetry has infinite force to break the symmetry, and that God is absolutely free to create. Yet, this is really an answer to the question '*how* does the symmetry break?' It does not answer the question, '*why* should the symmetry break?' Even if God is free to create, *why* should He create rather than remain inactive?

Dr Gong also has the unwelcome habit of leaving the discussion of a problem in the midway and referring to his other books for the solution, without even giving any hint as to what the solution is likely to be.

I quote below a few examples:

He talks of (i) 'theory of Everything', (ii) 'example-in-kinds' (p. 30), (iii) 'ghost-partner' (pp. 49, 50, 73) (in connection with creat-ion and symmetry breaking), (iv) 'ball-donut transformation' (p. 98) (in connection with the process of life and creation). But he refers the readers to his book, *Truth, Faith and Life*, for explanations of all these concepts. And yet understanding of these concepts are crucial for the solution of some of the problems he states.

The book contains a number of printing errors. The author should have taken care to avoid them.

Visva-Bharati, Santiniketan RITA GUPTA

DR KISHORE NATH JHA: 'न्यायदृष्ट्या आत्मवादानुचिन्तनम्', Nag Publications, pp. 248, Rs 39.00

This is a scholarly work by an erudite Sanskrit pandit, dealing with the Nyāya-Vaiśeṣika doctrine of self *vis-à-vis* the argumentative attacks on it by successive Buddhist thinkers of great eminence, down the centuries. The debate between the Nyāya-Vaiśeṣika view of self and the Buddhist view of selflessness started with Gotama's composition of the Nyāya aphorisms in which the Buddhist doctrines of universal momentariness, idealistic nature of the real and so on, which are opposed to the Nyāya concept of self were first criticised. The commentators and sub-commentators on the aphorisms like Vātsyāyana, Uddyotakara, Vācaspatī, Udayana, etc. modified and refined as also fine-tuned Gotama's criticism to meet the argumentative challenges levelled against it by a long line of intellectual stalwarts in the Buddhist fold like Dignāga, Asaṇga, Vasubandhu, Dharmakīrtī, Gñānasrīmitra, Ratnakrītī,. Śāntanaksita, Kamalaśīla, etc. The great treatises like *Nyāya-bhāsya, Nyāya-vārtika, Tatparyaṭīkā, Tātparya-pariśuddhī, Ātmatattvaviveka*, etc. authored by Nyāya-Vaiśeṣika savants and those authored by Buddhist savants, like *Gñānasrīmitra-Nibandhavali, Ratnakrītī Nibandhāvali, Tattvasaṇ-graha* and *Panjikā*, etc. are living testimony to the brilliance and sustained rigour and vigour of the debate that has gone on for almost a thousand years between the non-Buddhist and Puddhist scholars. Dr Jha has tried to give a bird's eye-view of the vast sweep of this debate within the 240 pages of his Sanskrit monograph on this subject. The extensive and appropriate quotations from source books appearing in the monograph show Dr Jha's first-hand acquaintance with and deftness in the use of of this material. Dr Jha's command of the Sanskrit medium of his presentation is also commendable though at places some of his Sanskrit expressions do not strike one as very felicitious. This may be so because the expository style adopted by Dr Jha seems to steer a middle course between the cryptic and concise dialogue-style of ancient scholars and the narrative style of modern writers.

It seems however that in his zeal to make his monograph as wide in scope as possible Dr Jha has included a lot of irrelevant material in it. It is the Nyāya doctrine of embodied self that is the real subject of discussion

in the book. The ultimate self or God is quite different from this subject matter. Why should then so many pages of the first two chapters be devoted to the discussion of the nature of God or the ultimate reality as admitted by the Vedāntic Ācāryas or the protagonists of the Śaiva, Pāśupata, Pāṇcarātra or Āgama cults? What again is the relevance of the discussion of the Vedic and Upaniṣadic views of self, God or Ultimate reality when it is the Nyāya view as opposed to the Buddhist view of selflessness that is the avowed object of discussion in the monograph? This same undue zeal to show off appears to be responsible for the inclusion of some stray ideas of Aviddhakarṇa in the discussion in the book when not much is known about this great but unknown author's contribution to the ongoing debate on self in Nyāya and Buddhism.

If, in the case of Aviddhakarna, Dr Jha has erred by overstatement then in the case of Udayana he seems to have erred by understatement. Udayana is by far the greatest Nyāya-Vaiśeṣika philosopher of ancient India and his *Ātmatattva-viveka* is a monumental polemical work in which the Nyāya-Vaiśeṣika concept of self is sought to be defended by the relentlessly vigourous attack on and refutation of all major Buddhist doctrines. In Dr Jha's monograph only a few pages are allotted to the exposition of the contents of this voluminous treatise. Is it not a great anomaly? The versatility and originality of Udayana's refutation of the Buddhist doctrine of selflessness does not seem to have been fully appreciated by Dr Jha. The central core of all Nyāya arguments against the doctrine of selflessness is the impossibility of explaining the experientially-testified fact of recognition. If there is no identity either outside or inside mind who will recognise anything as the same as what existed or appeared earlier and by what means when experiences themselves are in a state of flux? This is the essence of the Nyāya argument for self which has been presented in different forms by all earlier Nyāya-Vaiśeṣika scholars. Udayana greatly improves upon this argument. He shows very effectively by means of various ingenious arguments that the relationship involved in recognising or owning different cognitions occuring at different times cannot be rendered in terms of causation, however complex, binding the successive cognitions. Moreover, if it is some cognition itself in a series that is recognitive then either the cognition or the series will have to be regarded as the recogniser. Where is the 'I' to be accommodated in the series? If the 'I' is a different series from the series of which it is supposed to be a member then recognition will have to be understood as the membership of one series into another. But the felt identity of the recogniser eludes such a membership-relation. Udayana has stretched this and other related arguments to their logical extreme but Dr Jha does not show any awareness of this fact. This is a conspicuous omission in the book.

There are other noticeable omissions too which detract from the value of the book. The problem of the existence of self is not the only problem worth discussing on the subject of self. Nyāya's viewpoint on self is opposed

to those of other orthodox schools also, on many important points. For example, the nature of self's ultimate destiny consisting in its divestation of all its distinctive attributes, even including consciousness, the nature of summum bonum consisting not in a blissful state but only in the absolute absence of pain, the self's total unlikeness to God who though free of all bondage is yet endowed with eternal and all-encompassing knowledge, will, and effort, and so on, are some of the distinctive and very important doctrines about the nature of self (and God) entertained by Nyāya which appear very baffling to a modern student of Nyāya. Unfortunately Dr Jha does not say a word on any one of these doctrines to palliate the paradoxical nature of the Nyāya-Vaiśeṣika view of self. A mere exposition of the arguments advanced in defence of a certain self-concept by ancient thinkers cannot be of sufficient interest to a critical student of philosophy today. A critical appraisal of these arguments is very essential for a proper appreciation of the self-view sought to be defended by these arguments. Criticism is almost lacking in the whole discussion of the book. However, as perhaps the first Saṇskrit work of a comprehensive nature on Nyāya-Buddhist controversy on self, Dr Jha's book deserves a careful study by all students of Indian philosophy well-versed in Sanskrit.

Hanumannagar, Nagpur N.S. Dravid

OBITUARY NOTICES

Debiprasad Chattopadhyaya (1918–1993)

Marxist interpreter of Indian philosophy and novel chronicler of history of science

Professor Debiprasad Chattopadhyaya, who passed away on 8 May 1993 in Calcutta, was an able editor, a brilliant essayist, a profound scholar, an original thinker and a committed Marxist; he was internationally acclaimed as an authority on Indian philosophy and history of science in ancient India. Born in 1918, he obtained first class B.A. and M.A. degrees of the University of Calcutta having stood first in the examinations, in philosophy, and worked for some time as a research scholar under the supervision of Professor Surendranath Dasgupta. Later, he was awarded the D. Litt. degree by the University of Calcutta for his thesis on science and society in ancient India. Drawn to active political struggle since his student days he had been in the forefront of progressive ideological movements, which he always combined with his other academic activities. He had all along an unwavering faith in Marxism and died with the belief in its ultimate triumph, though witnessing, with great pain and shock, the recent disintegration of the Soviet Union.

Professor Chattopadhyaya taught philosophy for about more than twenty years in various reputed colleges in Bombay and Calcutta. But as the urge for devoting himself exclusively to research became stronger, he took voluntary retirement from service and became a research fellow of the Indian Council of Historical Research, New Delhi, in 1973. In 1987, he was elected a National Fellow of the Indian Council of Philosophical Research, New Delhi. In 1984, he was appointed a Guest Scientist of the National Institute of Science, Technology and Development Studies (a constituent establishment of the Council of Scientific and Industrial Research) to work as Project-In-Charge of the History of Science and Technology in India (Ancient Period), and held the post till his death. He had to travel extensively in India and abroad, on being invited to give lectures by various institutions which include Mysore University, Mysore, Birla Institute of Technology and Science, Pilani, Council of Scientific and Industrial Research, New Delhi, Indian Institute of Science, Bangalore, Indian Institute of Advanced Study, Shimla, Humboldt University, Berlin, Moscow University, Moscow, and East Asian History of Science Library, Cambridge. He presented papers at innumerable seminars in India and abroad, and was elected Sectional Vice-President, XVth World Congress

of Philosophy, Varna, Bulgaria (1973) and Sectional President, IVth World Sanskrit Conference, Weimar, Germany (1979). In 1972, he was awarded the Soviet Land Nehru Award and in 1982, the Science and Society Award, by the University Grants Commission. He was elected Member of the German Academy of Sciences, Berlin, in 1975 and received D.Sc. *Honoris Causa*, from the Academy of Sciences, USSR, Moscow, in 1981, being the first and only Indian to receive these honours.

Professor Chattopadhyaya was a prolific writer and wrote on a variety of subjects, though he will undoubtedly be remembered for his contribution to the study of Indian philosophy and history of science. His published works, written in Bengali and English, ranging from popularizers to serious ones, total over fifty and this is in addition to numerous seminar papers, journal articles and contributions to felicitation volumes, etc., published in India and abroad. Many of his major works have been translated into foreign languages and, also, into a few Indian vernaculars.

Professor Chattopadhyaya entered the field of Indological studies with the publication of *Lokāyata: A Study of Ancient Indian Materialism* (New Delhi, 1959) and the book won him instant recognition as a serious scholar. It drew the admiration of scholars not only in India but also in international circles, for its amassing of materials, logical analysis, reasonable appraisal of facts, commendable methodology and above all, some strikingly original ideas. It was welcomed as 'the work of a creative Marxist who knows and loves his subject' and 'a serious contribution to the Marxist study of the history of Indian philosophy'. It was said to be a book of definite value and deserving 'to be carefully studied by Indologists and sociologists'. It was 'indicative of a new period of Indian investigations of Indian philosophy'. Hence, one critic concluded: 'so many new ideas and explanations, with the support of such ample anthropological evidence, make the use of the author's method a very fascinating venture, and one that appears to have many good and welcome consequences'.

The three major works that followed the *Lokāyata*, and were mainly concerned with introducing and appraising the traditional systems of Indian philosophy and a number of major problems discussed in them, were *Indian Philosophy: A Popular Introduction* (1964), *Indian Atheism: A Marxist Analysis* (1969) and *What is Living and what is Dead in Indian Philosophy* (1976). Of these, the first, though claimed to be 'popular', did not follow the beaten track and contained a lot of material that had been unduly neglected in most of the older representations of Indian philosophy. As Professor Walter Ruben pointed out in the Foreword, whereas the general tendency was to act 'always from within the framework of the Vedanta religion', the author here felt the necessity of founding activity on science as opposed to religion and had 'to look back to scientific, materialistic elements in Indian philosophical tradition'. But perhaps more noteworthy is the point, emphasised by the author himself, that the book is not 'popular' in the sense that it is 'brief, easy-reading and non-technical' or that it tries to avoid any show of pedantry and mystification; it is 'popular' in conformity to the author's own understanding of the word. Thus he writes in the Preface: 'A popular introduction to philosophy has also to care for the *philosophical needs of the people*. . . . In a book that intends to be really popular it is not enough to explain what our ancestors actually thought and preached; it has the further obligation of discriminating between what is living and what is dead in all these. For, the need to retain what is valuable in our philosophical heritage is as pressing as to reject what is not. The reason is that the philosophical ideas of the past are not just curious for us. These may help or hinder our present progress. Among the stock of our ancestral ideas, therefore, those that go against the requirements of our present progress are in need of being critically surrendered while those that still retain significance for the building up of our desired future are in need of special emphasis'.

In fact, the idea of social relevance in the present-day context appears to be the guiding principle for almost all his serious writings. The Indian philosophical tradition is not merely an academic exercise, an intellectual stimulant, a marvel of the glorious past; it should rather be looked upon as a means for meeting the social requirements of the Indians today, an instrument for the vindication of secularism, rationalism and science-orientation. Thus the task of a philosopher would be to help the people distinguish between the 'living' and the 'dead' and to promote the former and to discard the latter. As Professor Chattopadhyaya clearly states in the Preface of his *What is Living and What is Dead in Indian Philosophy*: 'This book is intended to be an analysis of our philosophical tradition from the standpoint of our present philosophical requirements. These requirements, as understood here, are secularism, rationalism and science-orientation. In the general fund of traditional Indian philosophy, ideas and attitudes going against these are accordingly viewed as the deadweight of the past wanting to frustrate our present progress, as they historically did in ancient and medieval India. In the same general fund, ideas and attitudes at least with the potentials of secularism, rationalism and science-orientation are viewed as having living significance for us, though it is felt that we can rightly inherit them in so far as we can enrich them with contemporary knowledge and experience'.

It was, again, with the same end in view that Professor Chattopadhyaya took up the problem of God in Indian philosophy in *Indian Atheism: A Marxist Analysis*. Without an adequate idea of Indian atheism our knowledge of traditional Indian wisdom would remain imperfect and incomplete and this further indicates that 'the importance of Marxism in carrying forward the task bequeathed to us by our own philosophers is very great indeed'. Arguing that 'the traditional view that Indian philosophy is essentially spiritual, moving round the idea of God as the great basic fact of life' is a myth, for 'the overwhelming majority of the significant Indian philosophers were, in fact, committed atheists', he comments: 'Our philosophers did

their best to argue that, logically speaking, the idea of God was only an illusion. . . . Yet they reached nowhere near their desired objective, which could have been nothing but the full eradication of the idea of God from the Indian mind. But, in the Indian mind, the idea of God survived—and survived in a big way. . . . This was a situation which was impossible for our philosophers to understand. How was it that in spite of being illusory God could have such a living grip on human consciousness? Evidently, the idea of God had its root somewhere outside the sphere of mere philosophising and therefore, the philosophical demonstration of its hollowness could never be enough to uproot it. Marx is the first philosopher to show the real basis of the idea of God and also the real way of outgrowing the need for it. Assuming, therefore, that the Indian atheists seriously wanted others to share their own conviction, the real inheritors of their tradition can stop nowhere short of the acceptance of Marxism'.

But all along Professor Chattopadhyaya had also been deeply interested in the history of Indian science. As he himself explains the reason: 'But what happens to the theoretical positions once gained by science? These are not entirely lost. They survive in the general fund of Indian philosophical thought. Though usually neglected by the historians of Indian philosophy, what Indian science bequeaths to Indian philosophy is of immense significance. Without noting this, we can hardly understand the real source of some of the important trends of ancient Indian philosophy, particularly those that have an overtly secular and empirical interest'. Besides, some of the achievements of the ancient Indians in the field of science undoubtedly retain great social significance even for the present day, but as it happened in the case of the philosophical tradition, they also were sought to be obscured by strong 'counter-ideology', forces antagonistic to a genuine scientific spirit. It was thus necessary to raise a rather unusual question: 'What is intrinsic and what is extrinsic to Indian science even in the extant basic works of it?' All this prompted Professor Chattopadhyaya to come out with his *Science and Society in Ancient India* (Calcutta, 1977), a supplement to *What is Living and What is Dead in Indian Philosophy*, published shortly before. As the basis of this study he took up ancient Indian medicine, for as in ancient Greece, in ancient India also, of all the disciplines cultivated, medicine contained the greatest science-potentials. Despite the formidable difficulties of the first steps in science, Indian medicine, quite some time before the Buddha, made the momentous move from magico-religious therapeutics to rational therapeutics. It created a methodology of its own. Discarding scripture-orientation, it insisted on the supreme importance of direct observation of natural phenomena and on the technique of a rational processing of the empirical data. It moved towards an uninhibited understanding of world and man and the ancient physicians went in for a commitment 'quite audacious for their historical context', a commitment to 'the understanding of nature as a whole'. It also created potentials for various other natural sciences in

their later specialised forms—physics and chemistry, botany and zoology, minerology and climatology, not to speak of anatomy and physiology. 'But this science-consciousness goes strongly against the ideological requirements of the hierarchical society. The custodians of counter-ideology, interested in drawing a mystical veil on man and nature, sense danger practically in every aspect of science-consciousness—its secularism, its enthusiasm for rational processing of empirical data, its materialism and its democratic commitment. Hence they come out viciously against medicine and its practitioners'. Finally, due to 'the gradual erosion among the later doctors of the sense of total incompatibility between science and counter-ideology in the source-books of Indian medicine', there followed decadence and the eventual collapse of Indian medicine. It is thus a study of the rise and decline of Indian science in ancient India.

But an opportunity for realizing his lifelong dream of writing a full-fledged history of ancient Indian science emphasising 'the importance of relating the history of science, technology and medicine to the social conditions which surrounded their growth' came when, in 1983, he could set up a team for working on it with 'every help', moral and material, readily provided by the National Institute of Science, Technology and Development Studies, New Delhi. The results of the labour and research done by the team under the able supervision of Professor Chattopadhyaya found embodiment in two volumes: the first volume (Calcutta, 1986) covered the beginnings of Indian science during the period of the first urbanization (ancient Indus Valley Civilisation), and the second volume (Calcutta, 1991) discussed the formation of the theoretical fundamentals of natural science.

Firmly convinced that 'a study of science in Indian history is more than a mere academic exercise', he explained the basic reason for undertaking the project in all seriousness: 'An antidote to the malevolence with which we are being confronted today is the spread of the scientific temper. And one of the special problems created in the country is the illusion fomented by the regional chauvinists, communalists and fundamentalists is their claim to be the real custodians of our national cultural heritage. The claim is a fiction, in fact, the most dangerous fiction. And it has got to be debunked. But it cannot be debunked with mere demagogy. We have to lead our people to meet the technicians, engineers and scientists in our own history and to show how they were defending the scientific temper in their own way, defying the dark forces that threatened it. This indeed had been a very significant aspect of our national cultural heritage. We have also to try to lead our people to see what, in the past, inhibited our scientists . . . to move forward. . . . When we do this, we are confronted with an unexpected situation. The factors that inhibited the development of modern science in Indian history are inclusive of those that are still creating the zeal for casteism and communalism, murder and malevolence'. In other words, a study of the history of science in India is 'linked up also

with the question of our very survival'.

Instantly, upon its publication the first volume was hailed as a landmark, a masterpiece and a rare contribution to the literature on not only ancient Indian science but also on Indian culture and history of ideas. Critics, historians, scientists, archaeologists, sociologists, scholars and students, and general readers interested in our history and culture all received it with unambiguous admiration, even though sometimes not seeing eye to eye with the author. It was a book 'packed with scholarship in such a diverse and tricky field, closely argued and carefully considered'. It was 'a massive restatement of ancient Indian history', overwhelming the reader with its 'massive and relentless' documentation, a book showing that science too was as much a part of the Indian heritage and the essence of Indian culture was not, in spite of the generally held belief, mere mystical insight. Professor S. Nurul Hasan, while releasing the book, in December 1986, at the National Library, Calcutta, gave his impression in the following words: 'This book, I have no doubt, will enable us to judge for ourselves what are the aspects of our heritage we must maintain, preserve and conserve and what is it that we must discard'.

It would perhaps not be out of place to note also Professor Joseph Needham's simple but spontaneous tribute in the Foreword: 'It is almost too much of an honour for me to be asked to contribute a foreword to this new book of Chattopadhyaya and the team of excellent scholars which he has gathered together to help him in the enterprise. When I was younger I thought I knew something about the history and the philosophies of India, but now I realize how little it ever was. Yet it is quite clear that the history of science and technology in India will bear comparison with that of all the other ancient civilisations and I would like to congratulate the main author and all his colleagues warmly on this endeavour, which they have brought to such a successful fruition'.

A clear, concise and moving account of the author's purpose and endeavour is to be found in the review of the book in the *Nature* (Vol. 353, September 1991): 'This is more than a book on the history of science. It grapples directly with the issue of whether India is to have any future or not. Chattopadhyaya is a brave man, and he has tackled the fundamental problem head-on.... There were many brilliant early scientists in India, and it is in this book that we learn of them essentially for the first time. The author's historical spadework is breathtaking. He reconstructs the true story through the fog of the intervening religious fanaticism and undoes the tangled knots of mangled texts brought about by the centuries of distortion and suppression.... This is one of the saddest books ever written about the history of science. For never has a culture so satisfactorily stifled scientific progress as Hindu culture.... The Indian genius is there, but so is its nemesis. This book deserves to be read as a case-history of how rationalism can be defeated repeatedly over the course of three millennia. There is no parallel in the annals of human thought'.

Indeed, all Professor Chattopadhyaya's works are marked by high technical competence, excellent documentation, critical analysis, original interpretations, persuasive logic and clarity of thought and expression combined with an uncompromising commitment to social responsibility. It is a sad reality that scholars belonging to this tradition are becoming rarer day by day.

University of Calcutta, Calcutta MRINAL KANTI GANGOPADHYAY

S.S. Raghavachar (1913–1993)

Professor Singra Iyengar Srinivasa Raghavachar was born on 13 October 1913, at Melkote, the renowned pilgrim centre of 'Srivaishnavism' in Karnataka. He hailed from a family of distinguished scholars. His father was a scholar in *Viśiṣṭādvaita* and *Tarka.*

Professor Raghavachar had his early education in Melkote and was deeply absorbed in learning Sanskrit, which acted as a strong base for his further pursuits in Indian philosophy. He took his B.A. (Hons.) in 1937, from the Maharaja's College, Mysore, and specialised in social philosophy. A meritorious student throughout, he obtained his Master's degree in 1938, winning two gold medals. He was blessed with a fluency in the language and was a very good debater. After his M.A. he joined Maharaja's College, as a lecturer and also did research under the inspiring guidance of Professor A.R. Wadia, who was the first professor of philosophy in the Mysore University. He was at ease, both in Indian and Western philosophies. He had very good personal relations with distinguished scholars like Mahamahopadhyaya Lakshmipuram Srinivasacharya and Professor M. Hiriyanna.

Professor Raghavachar was a man of comprehensive knowledge and deep erudition. He had a remarkable ability and commendable thoroughness. His encyclopaedic learning, wonderful presentation, tact and constructive criticism won for him a large circle of devoted scholar-friends. He headed the philosophy department of the Mysore University from 1966 to 1973, with distinction and rare insights. He guided many students for their Ph.D. degrees. After his retirement, he was selected by the UGC, for the post-retirement research assignment and during that tenure he produced his *magnum opus, Srī Bhāṣya on the Philosophy of the Brahma Sūtras* (1986). He was a nominated member of the Syndicate of the University of Mysore from 1979 to 1983.

Professor Raghavachar's works include:

Introduction to Vedārthasaṁgraha of Śrī Rāmānuja (1957); *Śrī Rāmānuja on the Gītā* (1969); *Śrī Rāmānuja on the Upaniṣads* (1972); *Dvaita Vedānta* (1977); *Viśiṣṭādvaita Vedānta* (1977); *Studies in Vedānta* (1988) English translations of *Vedārthasaṁgraha* of Śrī Rāmānuja (1956); *Viṣṇu-tattva-Vinirṇaya* of Śrī Madhva (1959); *Naiṣkarmya Siddhiḥ* of Śrī Sureśvara (1965); *Anubhāṣya* of Śrī Madhva (1982); Kannada translations of *Paramārthasāra* of Abhinavagupta (1960); Rāmānuja's *Gītā-Bhāṣya.*

Professor Raghavachar received the Mysore University Golden Jubilee Award for his works on *Srī Rāmānuja on the Gītā* in 1970 and again for *Srī Rāmānuja on the Upaniṣads* in 1973. Again in 1978, he received the Golden Jubilee Award of the University for his works *Dvaita* and *Viśiṣṭādvaita.* Professor Raghavachar's works are superb in conception, rich in research details and masterly in design. He delivered many lectures at various universities. He delivered Principal Miller's Endowment Lectures on the 'Unfolding Purpose' at Madras University. At Annamalai University, he delivered 'Three Lectures on the Gītā', in 1973. Again, he was invited to deliver the Indian Philosophical Congress Endowment Lectures (1973–74) on 'An Exposition of the Glory of the Divine Mother Śrī Chaṇḍikā', two Golden Jubilee lectures (1977) on '*Viśiṣṭādvaita*' and '*Dvaita*', at the Dr S. Radhakrishnan Institute of Advanced Studies in Philosophy, University of Madras. He delivered the Sri D. Ramalinga Reddy Memorial Lectures for 1981–82, on 'Development of Hinduism' under the auspices of the Madras University. He was heard with rapt attention when he delivered six Romola Memorial Lectures for 1978, under the auspices of the Ramakrishna Mission Institute of Culture, Calcutta on 'The Philosophy of Bhakti and the significance of Hindu image worship'. He delivered the Sri Lalpet Venkatarathnam Endowment Lecture on 'The Philosophical Perspective of Śrī Rāmānuja', in 1988, under the auspices of Sri Venkateshwara University, Tirupathi.

Professor Raghavachar participated in many philosophical conferences and seminars all over the country. Even as a young scholar, his paper on 'The Buddha' attracted the attention of Dr B.R. Ambedkar, the scholar-jurist and Dr Kalidas Nag, the eminent Indologist. He has published over a hundred scholarly articles and reviews in various journals, both national and international.

Professor Raghavachar died on the evening of 30 May 1993, at the age of 80.

Professor Raghavachar was a multi-faceted philosophic genius. Though an intellectual colossus he was full of humility, reminiscent of Browning; 'Look at the end of the work, contrast the petty done; the undone vast'.

University of Mysore, Mysore V.N. Sheshagiri Rao

R.C. Dwivedi

Professor R.C. Dwivedi passed away on 27th September, 1993 in the Intensive Care Unit of the P.G.I. at Chandigarh where he had been brought after an accident which he had on the journey between Kalka and Shimla by train on his way to attend the "Translation" workshop which was being jointly organized by the Indian Institute of Advanced Study, Shimla and the Indian Council of Philosophical Research, New Delhi.

Professor Dwivedi had not only been taking active interest in the organization of the Workshop but had practically planned the whole thing. In fact, the detailed issues of the Workshop were planned just a few days before at a joint meeting held at Jaipur. His untimely death is not only a great loss to the world of Sanskrit scholarship, but also to the whole enterprise in which the Indian Council of Philosophical Research, along with some other institutions in the country, had been engaged for sometime past, that is in establishing a living dialogue with classical Pandits well versed in traditional learning and modern University trained English-knowing philosophers in the country. Since the very inception of the programme in early eighties he had been one of those few persons who were not only wholeheartedly involved in the enterprise, but also prepared to give their time and scholarship to it. His wide acquaintance with the world of both the modern and the traditional scholars in Sanskrit in the country and his charming personality and amazing grasp of both the modern and the ancient tradition of scholarship in various fields helped in building a bridge across the two intellectual cultures between which we were trying to establish a dialogue, the first fruit of which was published as *Saṃvāda* by the Indian Council of Philosophical Research, and of which he was one of the editors.

Since those early times Prof. Dwivedi had been continuously involved in the planning and organization of specialised seminars on Nyāya, Mīmāṁsā and Kashmir Śaivism, which were held at Benaras, Tirupati and Srinagar respectively. He was also the chief person responsible for planning and organizing a dialogue on current issues in Linguistics between modern and traditional scholars in the field which was held at Bhubaneshwar.

Earlier, the death of Pandit Badri Nath Shukla had dealt a severe blow to these pioneering projects as it was his towering personality which enthused us all in the new enterprise we had undertaken in the field of philosophy in this country. The untimely death of Prof. R.C. Dwivedi has almost dealt a fatal blow as there are very few persons left who either have the talent or the commitment or the enthusiasm to carry on what he so promisingly initiated more than a decade earlier. In fact Prof. Dwivedi had

very recently delivered the Badri Nath Shukla Memorial lectures on 'Trikadarśana' at Sampurnanand Sanskrit Viswavidyalaya, Varanasi which along with Dr G.C. Pande°s first Badri Nath Shukla Memorial lecture entitled 'Bhaktidarśana Vimarśaha' had been specifically chosen by Dr Mukund Lath for translation purposes at the Workshop which was held at Shimla.

His passing away is certainly a personal loss to us all who worked with him, but it is also an irreparable loss to the cause which was dear to us and to which he gave so much of his time and effort during the last years of his life.

DAYA KRISHNA

Books Received

Revolution and Enlightenment in Europe
Timothy O' Hagan, Aberdeen University Press, 1991.

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Timothy O' Hagan, Basil Blackwell Ltd., Oxford, 1984.

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Lakshmi Kapani, College De France De Institut De Civilization, Indien, 1993.

The Metaphysics and the Mysticism of Sri Nyaguna Shivayogi
Basavaraj P. Siddhashrama, Siddha Prakashana, Bangalore, 1993..

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T.N. Ganapathy, Indian Council of Philosophical Research, New Delhi, 1991.

Logic of Non-Case Relationship
Keshab Chandra Dash, Sri Satguru Publications, Delhi, 1992.

Sita's Kitchen
Ramchandra Gandhi, Penguin Books, 1992.

Metaphysics—An Introduction by Brian Carr
D.J. O' Connor, Macmillan Education Ltd., 1987

Mentalistic Turn: A Critical Evaluation of Chomsky
Kalyan Sen Gupta, Jadavpur University, Calcutta, 1990.

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Chittaranjan Roy, Pragati Publications, Delhi, 1993.

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S.W. Bakhle, Dattasons, Nagpur, 1993.

Saundarya Tatva Mīmāṁsā
सौन्दर्य तत्त्व मीमांसा।
Shyamla Gupta, Seema Sahitya Bhawan, Delhi, 1992.

A Reconstruction of the Third School of *Pūrva-Mīmāṁsā*
Ujjwala Panse, Sri Satguru Publications, Delhi, 1990.

Dharma, India and the World Order
Chaturvedi Badrinath, St. Andrew Press, Edinburgh, 1993.

Journal of Indian Council of Philosophical Research

Editor: DAYA KRISHNA

Volume XI Number 1 September–December 1993

The JICPR announces the publication of
a special issue devoted to the issues in

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For more details please write to the following address:

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