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Reflections on

SCIENCE, PHILOSOPHY AND ART

Reflections on SCIENCE, PHILOSOPHY AND ART

By

Prabas Jivan Chaudhury

With a foreword by

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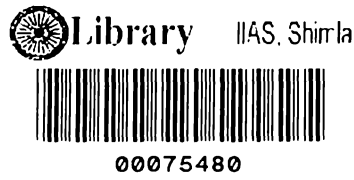

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Preface

The death of Dr Prabas Jivan Chaudhury on May 4, 1961, at the age of 45, was deeply mourned by his innumerable students, friends, and admirers in India and abroad. At the initiative of some of them, a memorial committee was formed and a number of distinguished scholars, Indian and American, were happy to associate themselves with it. The committee felt that the most fitting memorial to Dr Chaudhury would be the publication of some of his select essays which, if widely known, would lead to a greater appreciation of his aims and achievements as a philosophical thinker. The present volume is being published in consequence of that decision.

We are deeply grateful to the editors of The Review of Metaphysics (New Haven, Connecticut, U.S.A.) Philosophy and Phenomenological Research (University of Buffalo, U.S.A.) Analysis (Basil Blackwell, Oxford), The Indian Philosophical Quarterly (Amalner, Maharashtra, India), Calcutta Review (University of Calcutta), Journal of the Department of Letters (University of Calcutta), Visva-Bharati Quarterly (Visva-Bharati, Santiniketan) for kindly giving us permission to reprint the articles published in their journals.

We are also grateful to Prof. E. A. Burtt of Cornell University, Prof. G. B. Burch of Tufts University, Dr Thomas Munro, former editor of *Journal of Aestheties and Art Criticism* Cleveland, Ohio and Dr Pavlo Buffi, Director-General, Banca D. Italia, Rome, Italy for their generous contributions and the keen interest they have shown in the work of the memorial committee.

Foreword

I distinctly remember the day—it was sometime in Summer near about 1943—when Prabas Jivan, who used in those days to come to me in every vacation, suddenly asked me whether it would be advisable for him to try for an M.A. degree in Philosophy the next year. He was already an M.Sc. in Physics and M.A. in English. I was taken a little aback, but I knew the metal he was made of. I replied, "Yes, provided you select texts according to my choice". He followed my advice almost religiously and came out brilliantly successful in the next year's examination with a high First Class. Since then, and right up to just a few days before his death, we had often been discussing philosophical problems of various types, and always in the spirit of reciprocal gain. He said he learnt classical philosophy from me; but I always learnt more, because he was a voracious reader of current philosophical and scientific literature and I never lost an opportunity to profit by his scholarship.

He was constitutionally an original thinker. Almost every philosophical problem—whether of the old-type metaphysics or of the extramodern *de-ontology* or of the present-day philosophy of science or even of literature and æsthetics—was very seriously his own and he always threw new light. On every question he had his own answer, and this was possible only because he had a philosophy of his own—a philosophy in which science and metaphysics were made to live in peaceful coexistence. Prabas Jivan was a sound scholar in both science and philosophy; naturally, he tried all his life to maintain a balance between the two. As an admirer of modern science he could not countenance the old-day metaphysics in its traditional form which as such, he said, was nothing in comparison with science (and philosophy of science) as a pursuit of turth. At the same time, as a genuine lover of philosophy he could not eliminate metaphysics altogether. His love for literature, art and æsthetics showed him what was in his opinion the correct procedure of metaphysics—a search after *total truth* through robust imagination and spontaneous use of analogies. The philosophical truth was, in his opinion, more or less heuristic. This is the way he interpreted the philosophy of Advaita Vedanta. This is also the way he introduced æsthetics in the field of philosophy.

The present work is an anthology of some of his published and unpublished articles. It contains three groups of essays. The

topics of the first group concern modern science, modern-day philosophy of science and another modern discipline technically called 'Analysis'. The second group of problems are exactly those of traditional metaphysics and epistemology—re-interpreted from his own view-point and disposed of accordingly. The problems in the third group are all of æsthetics. The fourteen essays, selected for this volume, represent Prabas Jivan's thoughts in its entire structure.

That he was an original thinker was evident to everyone who came in contact with him. A man of robust optimism and apparently cheerful all through his life, he has never less serious about the basic problems of life and existence than the most genuine of the Existentialist thinkers of today, and in spite of his repeated statements that he had reconciled philosophy with science I know it for certain that he was all along troubled with the question of real reconciliation of the two.

I remember how he felt seriously concerned with the problems of Death, God and Future Life barely a fortnight before his death on our way to Bangalore and back. He was telling me repeatedly that he would soon die, though he was then only forty-four. I confess that though we discussed in our own way these problems I never took any serious note of his premonition. But he was right—he died on 4th May, 1961, just at the time when he was rushing to the height of his glory as a modern Indian philosopher. How we wish he were alive today to carry on his rich philosophical pursuit.

I should thank his worthy wife, Sm. Ashabari Choudhury and a few of his students and friends but for whose devotion to Prabas Jivan and unceasing effort to see this work published much of his valuable writing could not be presented to the reader in one volume.

Santiniketan
26th October, 1965

KALIDAS BHATTACHARYYA

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Concepts of Meaning and Understanding in New Physics

1. Introduction

WHAT was Einstein doing when he gave the general theory of Relativity in the form of mathematical equations containing the four 'generalised coordinates' and the ten 'gravitational potentials' and spoke in this connection of 'curved and closed space'? Did he *mean* anything and advance our *understanding* of some aspect of nature? The same question may be asked about the performance of Schroedinger with his Psi-function, of Heisenberg with his matrices and Dirac with his phase-waves. The students of modern physics answer this question in the affirmative, while a large section of philosophers will answer in the negative. This is surely perplexing to many who will ask themselves, "Is it that these leading physicists of our times bungled their job and betrayed the true ideal of science and that what is commonly known as the brilliant achievement of modern physics is but a heap of nonsense, or is it rather that the philosopher-critics of new physics are mistaken in judging this work by wrong criteria of science?" The layman will be inclined towards the second alternative, for it is *prima facie* less probable that the physicists have been deceiving themselves with glittering trifles than that the philosopher-critics are rather fanatic about what they think science ought to be, more precisely, about their definition of "meaning" and "understanding" with reference to scientific statements. The layman feels that the physicists must be finding *some* sense in the theories of relativity and quantum mechanics which, moreover, do offer them *some kind* of understanding of the world though the precise nature of this sense and understanding may not be very clear to them. The physicist who resents the philosophic criticism of the new developments of his subject will do well to clarify his so far vague ideas of 'sense' and 'understanding' in relation to his new science, and, moreover, to find some reasons for holding these ideas rather than those held by the philosopher-critics of this science. The present paper is directed to help the physicist in this task of

clarification and vindication. The nature of this task may be roughly indicated by its parallel in the philosophy of art where, for instance, a romantic critic like Coleridge upheld Shakespearean drama against its neo-classical critics, or a modern critic like T. S. Eliot vindicating the new movement in English poetry, of which he himself is a leader, against people who think that new poetry is 'true nonsense and false art'. The task, generally, is then, *first*, one of explication of what is actually meant by somebody's claiming some piece of scientific (or artistic) work to be meaningful and, *second*, one of showing how this explicated meaning is more adequate or theoretically justified than its rival.

2. *The problem and its historical background*

The problem at hand arises from the situation in the new theories in physics where the fundamental expressions, axioms, postulates and even theorems, do not describe any observable fact but are relations of pure theoretical constructs or uninterpreted symbols. Certain formulae follow from these top-level expressions according to the rules or definitions of the system and these are connected to observables (like pointer-readings) by Semantic rules.[1] The theory is then a calculus for predicting certain observational facts from certain others in a specific sector of enquiry. As such it states no fact and offers no understanding of the world but only provides us with a useful device to systematise a class of observables. It is neither true nor false but only less or more convenient. Should it then belong to pure or theoretical science which means a body of knowledge or rather to applied science or craft? Yet the physicists who devised these theories never suspected themselves to be straying from the path of pure science to that of technology. They were quite clear about the abstract or non-representative nature of their theories[2] and most probably

[1] See for a description of this axiomatic or formal method in science, R. Carnap: *Foundations of Logic and Mathematics*, (in International Encyclopedia of Unified Science, Chicago, 1955, Vol. I), pp. 206-10. (First published separately, Chicago, 1939). The relevant part is reprinted as "The Interpretation of Physics" in *Readings in Philosophy of Science*, ed., Feigl and Brodbeck, N. Y. 1953.

[2] E.g. see Einstein: *On the method of Theoretical Physics* (London, 1933), p. 9; Also his, *The World as I see it* (New York, 1934), p. 30. E. Schroedinger: *Science and Human Temperament* (London, 1935), Chap. 7. P. A. M. Dirac: *Principles of Quantum Mechanics* (Oxford 1935), p. 10. W. Heisenberg: *The Physicist's conception of Nature* (London, 1958), p. 15.

they knew the simple difference between science and technology. So that we have to find out the precise sense in which they and their followers may have understood scientific knowledge, and then see how this sense is more adequate than the one of the philosopher-critics of new physics.

This other sense has its roots in three separate beliefs about science. *First*, the belief in the traditional Aristotelian theory of science that demands that science must be essentially deductive consisting of a finite number of principles, self-evidential to one's intuitive vision, from which factual sentences can be logically deduced; only a summary inspection of the observable facts is required for eliciting the intuition of these principles.[3] *Second*, a belief in causal or mechanical explanation of sensible facts, that is to say, a faith that logically perceptible, even though empirically and not merely technically imperceptible, objects must exist at the back of the sensible phenomena, to be explained. (To explain these different sorts of perceptibility we may cite the case of submicroscopic objects like atoms and electrons, which being smaller than the wavelength of visible light of the shortest wavelength (violet) cannot be observed under the so far known laws of physical and physiological science. They are said to be empirically imperceptible. But they are logically perceptible as it is not self-contradictory to think that they could be perceived. The other side of the moon is only technically unobservable so far, but is both empirically and logically observable). The faith in such a causal explanation of phenomena led classical physicists to construct the theories of submicroscopic particles which successfully explained so many phenomena. The success strengthened the faith which, therefore, must reject abstract theories. *Third*, a feeling that no statement be allowed in science which has no sensible meaning, that is, which is not in principle (or logically) directly verifiable by sense-experience. This is the feeling behind the empiricist criterion of meaning which seeks to exclude all metaphysical or abstract talk by this criterion.[4]

[3] See E. Beth: "Critical epochs in the development of the theory of Science" (*B.J.P.S.*, Vol. I, No. 1, May, 1950).

[4] See M. Schlick: "Meaning and Verification" in *Readings in Philosophical Analysis* ed., Feigl and Sellers, (N.Y. 1949).

With respect to the first belief, mentioned above, about the nature of science, we may note that Aristotle's logic teaches by implication that the fundamental principles of science must be supersensible or metaphysical, to be known principally by some meditative search which is only aided by observation. But since access to the abstract metaphysical principles was found impossible, they were replaced in scientific practice by such hypothetical constructs as have a close analogy with commonsense experience and, so have a *prima facie* plausibility or self-evidential character. The proof of these constructs rests on this character rather than on the verifiability of their consequences. This modification of the Aristotelian logic of science was indirectly helped by Thomas Aquinas who explained and justified the use of analogy in metaphysical knowledge. Thus the transcendent hypotheses modelled on our commonsense experience came to be recognised as the true kind of scientific principles. This logic of science led to the distinction of a mathematically true theory of science, which is but a convenient instrument for saving and predicting appearances, from a philosophically true one that describes the real state of affairs. This notion of science worked in the mind of Bacon when he rejected the Copernican theory in favour of the Ptolemaic one, and in the mind of Newton when he described space as the 'sensorium of God', and also in Kant when he spoke of space, time, substance and causality as 'the metaphysical principles of science'.[5]

With respect to the second belief about the nature of science we may mention that this notion of scientific explanation is an extension of the commonsense notion of explaining a situation by an observable cause according to known laws in the manner of accounting for the disappearance of one's purse in terms of a thief who may be subsequently caught. The hypothesis of Neptune to explain the perturbations of the motion of Uranus is an instance of this sort of explanation. Explanations in history and geology too are somewhat of this kind. An explanation in these cases suggests a verifiable diagnosis of a symptom, so to say. It is completed when the diagnosis is directly verified, but partial or tentative when not so verified, though it is not empirically impossible

[5] See Philipp Frank: "Metaphysical Interpretations of Science" (*B.J.P.S.*, Vol. I, Nos. 1 & 2, 1950).

to verify it, and when there is no rival diagnosis in the field. In the latter case, there is no law of nature, but only some technical difficulty, that prevents the verification of the hypothesis,—such as, for instance, that about the appearance of the other side of the moon; or, say a hypothesis about some geological state of the earth or some historical event in the distant past which may be thought to be verifiable in a way by photographs of these objects taken by some ancient but scientifically developed people of some planet. Explanations in terms of such hypotheses are also accepted by enlightened commonsense. Now this commonsense notion of explanation works in a liberalised and sophisticated form in many scientists and laymen who admit explanatory hypotheses that are empirically unverifiable though logically verifiable. The submicroscopic bodies belong to this class of hypothetical entities. They are modelled on our ordinary notion of particles and, so, suggestion of their existence has a *prima facie* plausibility to minds believing in the traditional (Aristotelian-Thomistic) logic of science described above. There is thus a subtle connection between the first two grounds of philosophic criticism of abstract science.

The third ground of this criticism is an empiricist criterion of meaning that demands a statement of a scientific theory to be descriptive of something that can be at least logically, if not technically and not even empirically, verifiable in sense-experience. The criterion seems *prima facie* to be a sensible one, for how else can a statement in science be demarcated from one in metaphysics ? This criterion was rather narrowly conceived by Mach who sought to do away with all empirically unobservable entities like the submicroscopic ones, and admitted them only as 'auxiliary concepts' or mere 'abbreviations' for 'economy of thought' or convenience.[6] They could be explicitly defined in observation terms and, so, eliminated from the scientific theory, which would describe the sensible by the sensible as Poynting put it. Goethe, we know, treated the transcendent hypotheses as scaffolding of the edifice of science to be removed when the latter is completed, and we remember Russell's advice : "Whenever possible logical constructs are to be substituted for inferred entities."[7]

[6] E. Mach: *Science and Mechanics* (Chicago, 1893), p. 315, pp. 495-6.
[7] B. Russell: *Mysticism and Logic* (Pelican ed. 1953), p. 148.

But the criterion of meaning implying a reductionist strategy in scientific methodology could not be in principle carried out in practice, for experience being open-textured we cannot definitely tell which set of experiences are to be correlated with a particular transcendent hypothesis. As a result we can never translate any scientific statement containing a transcendent hypothesis into observation statements without remainder or loss of meaning, and, so, eliminate it from scientific discourse.[8] Moreover, a logical construct, being a summary of a system of sense-data, cannot have a prospective reference or predictive function that belongs to inferred entities which being, though not empirically, but only logically, observable, are postulated as existent and not held as fictitious. So that the logical constructs, though metaphysically simpler than the inferred entities, are methodologically less sufficient.[9] This difficulty about logical constructs had a tendency to lead scientific thought to view the so-called inferred entities as somehow really inferred, though this inference cannot be strict like that of an observable object, say, fire, from its concomitant, smoke. Some sought to justify such an inference by describing it as an indirect observation "through causality" like touching a table by a stick,[10] and arguing that such an inference from a connected series of observations (like pointer-readings, clicks in electronic counter, photographs of condensation tracks) and through certain relevant hypotheses yields more reliable knowledge than direct observation, just as a verdict based on thorough circumstantial evidence is more dependable than a few eye-witness accounts.[11] Now these attempts to rank the transcendent entities with observable objects imply a faith in the former objects as logically observable, though technically or even empirically unobservable. Thus the empiricist theory of meaning implies an implicit metaphysical theory that reality has a uniformity of structure at all levels of

[8] See for a brief discussion of this matter, S. F. Barker: *Induction and Hypothesis* (Cornell, 1957), Chap. 6. Also F. Waisman: "Verifiability" in *Logic and Language*" ed. A. Flew (Oxford, 1951).

[9] See L. W. Beck: "Constructions and inferred entities" *Philosophy of Science*, Jan. 1950, also reprinted in *Readings*, ed. Feigl and Brodbeck. *op. cit.*

[10] E.g., V. F. Lenzen: *Procedures of Empirical Science* (I.E.U.S., *op. cit.*), Vol. I, part I, pp. 320-21.

[11] E. H. Hutten: *Language of modern physics* (1956), pp. 52-53.

analysis not excluding the (empirically) imperceptible one,[12] so that the model or analogue of everyday experience may be at the back of the latter experience. Now this criterion of meaning, though broader than the one of Mach and earlier positivists that allowed sub-microscopic entities only as logical constructs or convenient myths, is still not broad enough to admit the abstract theories of new physics that do not describe any logically observable object. Recently some methodologists like Carnap[13] and Braithwaite[14] have sought to rehabilitate the abstract theoretical constructs of physics by a half-hearted and vague assertion that these constructs somehow get partially and tentatively interpreted and acquire empirical significance through their connection with observation statements. Einstein too seems to entertain such a liberalised concept of empirical meaning, when he declares that for this meaning of a theoretical construct "it is only necessary that enough propositions of the conceptual system be firmly connected with sensory experience."[15] Both Ayer and Bridgman, who at one time demanded a strict criterion of empirical meaning for theoretical constructs,—the former in terms of 'verifiability' and the latter in terms of 'physical operations' (involved in determining the entity represented by the construct),—eventually came down to compromise in the matter in terms respectively of 'confirmability' and of 'mental, verbal and paper-and-pencil' operations besides the physical ones.[16] But such compromises and half-way houses do not really help us to settle the question of meaning of the abstract non-intuitive constructs of science. It is difficult to think of meaning being gradually acquired by an originally meaningless expression as research goes on, though this may be a metaphorical way of describing the actual procedure of science where con-

[12] A. C. Lovejoy advocated this view, see his, *Revolt against dualism* (Open court, 1930), pp. 296-7.

[13] R. Carnap: "Testability and Meaning" (*Philosophy of Science*, Vols. 3-4, 1956-7). Reprinted in *Readings*, ed., by Feigl and Brodbeck, *op.cit.* Also see his "Truth and Confirmation" in *Readings*, ed., Feigl and Sellars, *op. cit.*

[14] R. B. Braithwaite: *Scientific explanation* (Cambridge, 1953).

[15] Einstein: "Remarks on Bertrand Russell's theory of knowledge" (in *Philosophy of B. Russell*, ed., P. A. Schlipp, Evanston, 1944), p. 289.

[16] A. J. Ayer: *Language, Truth and Logic* (London, 1946), Chap. I. P. W. Bridgman: "Operation Analysis" in his *Reflection of a Physicist* (N.Y. 1955).

cepts like force, energy, etc., are not fixed but develop.[17] Moreover, it can be shown that this criterion of meaning cannot succeed in ruling out purely metaphysical hypotheses from creeping into science.[18]

3. *The proposed solution*

We thus see that the several notions about what science ought to be have suitably combined to bring about the present crisis in scientific methodology, namely, the denial of any scientific sense and merit to what are acknowledged by the physicists to be the greatest achievements of science. The very alienation of direct sensible meaning from the key-concepts of science, that which has repelled a section of philosophers, has been welcomed by many scientific methodologists as instrumental in increasing "the scope, simplicity and experiential confirmation of scientific theories."[19] Use in scientific theories of analogies drawn from common experience is regarded as positively unhelpful for the progress of modern physics.[20] In such a situation it seems necessary for us to clarify and defend as best as we can the sense in which these scientific thinkers find the abstract theories of new physics meaningful and fit to be called scientific.

3(*a*). *The meaning of abstract theories and how they offer us understanding of the world*

To clarify the above-mentioned sense we may summarily state that when the physicists speak of the abstract theories being meaningful and offering us understanding of nature they mean, by implication, that these theories, though having no meaning in isolation, make the observation statements with which they are indirectly connected by a long chain of definitions and reduction statements, meaningful. They may be likened to such parts of a sentence as prepositions and conjunctions which, without denoting anything, make a sentence, containing some denotative

[17] C. G. Hempel: "Fundamentals of concept formation in Empirical Science" (*I.E.U.S. op. cit.*, Vol. II, No. 7), p. 49.

[18] See S. F. Barker, *op. cit.*, Chap. 7.

[19] See Hempel, *loc. cit.*

[20] See R. B. Lindsay: "Future of Physics" in *Philosophy and Science* (Oct. 1938, Vol. 5, No. 4), pp. 465-67. Also, E. Zimmer: *Revolution in Physics* (London, 1936), p. 222.

words, descriptive of a state of affairs, and, so, meaningful. They relate or order classes of observables in a particular sector of enquiry and, so, render them significant, so that we can predict some future observations from certain given ones with the help of these abstract theories. The theories thus offer us an understanding of a section of the observable world. They are thus meaningful and effect understanding of nature in the above senses. Can we say that we do not know what a word like 'in' or 'against' means just because we cannot mention or point to any referent of it ? We know what such a word means in the sense that we know their use in meaningful discourse and know how they shed meaning on other terms, which separately mean observable things, but jointly mean a complex state of affairs only with the aid of these so-called meaningless words. To use a phrase of Wittgenstein in a slightly different context we may say that the meaning of an abstract unintuitable expression or theoretical construct in new physics 'shows itself' as we operate with it in the description and prediction of phenomena. And since the phenomena are thus brought under some rule or order, these expressions or constructs may as well be said to effect our understanding of the world.

3(*b*). *Vindication of this view*

This being the sense in which the uninterpreted constructs of new physics have meaning and yield understanding to the world, we may now seek to defend it against its critics. The latter hold that a theory must be descriptive of some physical state of affairs and that the empirical laws describing the observable phenomena in the sector of enquiry must be derivable from the theory. The justification of the theory has to be given not only in terms of the confirmation of the laws by the observational data, but also in terms of some independent and more direct evidence for the existence of the physical objects or principles postulated by the theory.[21] The case of the Kinetic theory of gases to explain Boyle's law, that describes the relation of pressure to volume of gases, and an independent and more convincing confirmation of the theory by the phenomenon of Brownian movement may be cited to illus-

[21] A modern exponent of this view is L. O. Katsoff, see his, *Physical Science and Physical Reality* (The Hague, 1957), pp. 159-61, also Chap. 20.

trate and support this view. The treatment by Roger Cotes[22] of Newton's law of gravity and of inertia as inherent powers of matter, respectively, to attract other matter and to resist a change of motion in it may also be cited. The molecules of a gas as well as the principle of gravity were regarded by many scientists and philosophers of the time as ultimate facts having a self-evidential validity because of their analogy with common experience. But this conception of scientific theory must be critically considered. Suppose a theory postulates some observable thing which is subsequently verified by observation, then the theory (together with the laws under it) describes an order of observable phenomena, made up of those stated by the theory and others explained by it. We admit that discovery of new existent objects is a part of a scientist's job, but as soon as such new objects are discovered through hypotheses and verification of them and related to other objects, there arises the question of further explaining this new order of objects in terms of some other observables. Similarly the explanation of attraction of bodies in terms of gravity cannot be final. The essentialist's view that there are some ultimate physical objects and principles which are self-evidentially true is a mere dogma that aids obscurantism. Newton himself regarded inertia to be an essential and ultimate property of matter but not gravity which he sought, but failed, to explain in terms of mechanical push of matter which he thought, following Descartes, to be an essential property of all bodies or extension.[23]

Now the causal explanation of the sensible either by the sensible (*i.e.*, technically discoverable) objects or by some *prima facie* plausible principle such as the essentialists conceive and demand of science cannot be possible after a certain stage of scientific advancement when the scientists have to postulate logically observable, but technically and even empirically unobservable, objects and abstract principles at the back of observable phenomena to explain them. The molecules are generally said to be indirectly verified by the observation of Brownian movement and the scintillations under the ultra-

[22] See his preface to the second edition of Newton's *Principia*. See also K. Popper: "Three views concerning human Knowledge" in *Contemporary British Philosophy*, 3rd series (London, 1956), p. 369.

[23] See Popper, *op. cit.*, p. 371.

microscope, but strictly speaking they are but postulates to account for these effects which, however, provide independent and closer evidence for these particles than done by the empirical laws (like the Boyle's and Charles's laws) that require them as explanatory hypotheses. The same may be said with regard to electrons which are again said to be indirectly verified by the condensation tracks in the Wilson chamber and the clicks in the Geiger counter. In fact they are but models or analogical objects which cannot be verified but merely confirmed to some degree by verifying their consequences. As said before it is not any technical difficulty that prevents their direct verification but it is the constitution of nature itself, so far as it is known by us, that stands in the way. Now the positivists sanction such hypothetical entities though they are empirically imperceptible, and they cannot be inductively (*i.e.*, hypothetico-deductively) established with any certainty because one cannot be sure that there are no rival hypotheses to explain the same class of phenomena. They do it because these hypothetical entities bear some analogy with ordinary objects and, so, are meaningful and *prima facie* plausible. The theories in terms of these models or transcendent hypotheses are held as scientific. They are not like a mere mathematical theory, which is just a descriptive law having no explanatory value and giving us no understanding of nature in this sense. So far then we see that the three beliefs, mentioned above, that are antagonistic to an abstract theory in science, namely, that (*i*) the theory must appear to be self-evidential providing ultimate explanation of the phenomena treated by it, (*ii*) that it must be causally explanatory and (*iii*) descriptively meaningful, are operative at the back of the modern positivist methodology. It admits the logically observable objects like the sub-microscopic particles, but rejects the purely non-intuitive theories of Einstein or Dirac, treating them as mathematical devices for correlating facts offering us understanding of nature.

Now the three notions about scientific theory operative in the rejection of abstract theories are arbitrary norms that have an applicability in science in a restricted sphere. When science is still in its infancy we can guess and discover some observable agent causally related to a mass of other observable phenomena and explaining them. At a more developed stage of science these observable and causally explanatory objects may be

exhausted, and we have to imagine certain analogues of observable objects to explain phenomena which will now include the formerly discovered causes. The analogues or models are then treated as logically observable and, so, really existent, though not technically and not even empirically observable. Though they cannot be verified but only confirmed to some extent by verifying some of their consequences, and there may always be the possibility of their being replaced in future by better hypotheses, they are admitted in science because of their analogy with commonsense experience, which analogy confers on them some sort of plausibility. Now this rather psychological, particularly aesthetic, preference for such entities and the related methodology of science, which has only a heuristic value, comes to grief at a further advanced stage of science when it is found that models do not really help us in organising facts. If we consider an atom or an electron to be a physical object with certain values for mass, size, shape, etc., then we are led to enquire about the reason behind just these values, whereas if we consider them as point-masses then we fail to understand how an entity without extension can be material, and a seat of force. In the case of electrons we find that its charge must become infinite as Dirac has shown. The behaviour of light requires for explanation two types of models, the wave and the particle, in two types of experiments as Heisenberg has shown. So that the particles as substantial and existent entities must be given up in advanced physics when a richer and a more complex experience requires them to be replaced by measurable parameters like mass, momentum, charge, etc., and the phenomena of interaction and transformation of particles in nuclear physics can be better represented in terms of parametric structure of the changing phenomena. An elementary particle is only a transitory carrier of certain parameters.[24]

Now the view that these parametric structures are real entities, rather than the things that are said to have them, leads to a mathematical description of phenomena, and so to abstract theories like those of Einstein, Schroedinger and others. We must recognise the reasons that have compelled these physicists

[24] See L. L. Whyte: "Fundamental Physical Theory", (*B.J.P.S.*, Vol. I, Nol 4).

to construct such theories rather than those of the classical type. The nature of the data they have to cope with is different from the data of the older scientists who could very well succeed with neat models. The ideal of meaningfulness and understanding in science that is psychologically more satisfactory and applicable to classical physics cannot be valid for new physics that has to deal with data of a finer and more intricate sort. Should we judge the novels of James Joyce and Virginia Woolfe by Victorian standards ? Do we not see that the experiences now treated by these novelists are more subtle and delicate, and, so, generally more subjective, where the neat and trim description of them is impossible. Hence the dissolution of plot and character and even of language (as in Joyce) in these novels. Justification in the logic of science for the new norms of meaning of scientific theories and for their capacity to offer us understanding of the world can be best done by showing how the old norm is utterly arbitrary and unrealistic in the new circumstances. Though the norms are not set up just to suit a certain order of things, for they state what ought to be rather than what is, yet this is but one side of the matter. The other side of the matter is that what a norm lays down as ought to be must be justified by the existing circumstances, that it is reasonably possible for one to produce things according to the norm which must not be too exacting or irrelevant. We can define science in whatever manner we please and reject whatever portion of science does not satisfy our definition, but this arbitrary procedure will not be of any use to anybody. We have to see whether our definition is adequate. Of course there is an irreducible element of choice or subjectivity in this matter of setting up norms or definitions, and hence the constant disagreements over the question whether a particular work of a scientist (or an artist) is really scientific (or artistic). But there are constant attempts at clarification and justification of one's norms, such as the present effort, and these do effect some kind of mutual understanding and agreement. So that the fact that a norm or definition of what ought to be called scientific, though not a matter of straightforward description of facts but one of prescription of a way to evaluate facts, is not a matter of pure subjective preference. There is a large core of objectivity in this respect and, so, scope for argument, such as is offered here in defence of our own

norms of meaning and understanding, which justify abstract theories of new physics.

3(c). The Objection of K. Popper answered

We have not only described the conception of scientific knowledge that works in new physics to-day, but have also prescribed it in spite of the classical opposition against it. We have shown how this opposition is grounded in nothing but a prejudice which may be corrected by an inspection and appreciation of the actual situation in recent physical research, where the demand for a priori plausible descriptive theories (*i.e.*, postulates of models believed to be real existents) and causal explanations cannot be fulfilled. Now this implies that we have to content ourselves with certain abstract theories or mathematical formulae that do not describe any hypothetical and explanatory facts behind the ordinary observable ones, the data, but in a way describe, without explaining, the data, that is, the empirical world. So that these abstract theories are but calculi which are neither true nor false but less or more 'adequate' (as Schroedinger[25] admits) or 'right' (as Heisenberg[26] puts it) in their respective contexts or ranges of applicability. This means they are instruments or devices rather than pieces of information and, so, new physics that utilises them should be regarded as a kind of technology rather than science. This is what Karl Popper contends.[27] He, however, admits abstract theories of modern physics but rejects a formalistic (or instrumentalistic) interpretation of them. He believes that they are "genuine conjectures, highly informative guesses about the world"[28] He hopes that the physicists who conceive them instrumentally will eventually correct their mistake. Now certainly this criticism that accepts the abstract theories themselves but only objects to their interpretation as formal and instrumental, is less drastic and flighty than the one that, accepting this interpretation and believing in the classical notion of science, regards them as misguided efforts. But so far as this criticism merely shows how the instrumentalist view

[25] Schroedinger: *Science and Humanism* (Cambridge, 1951), p. 22.

[26] Heisenberg: *Dialectica*, Vol. 2, p. 333.

[27] K. Popper: "Three views concerning human knowledge" in *Contemporary British Philosophy*, *op.cit.*, pp. 377-86.

[28] *Ibid.*, p. 382.

disappoints the original aims and attitudes of science and appeals to our natural weakness for the latter, it is inconsequential. It is no good warning us against the defects of instrumentalism; since according to this view theories are neither true nor false but useful in various degrees in various ranges of application, they always hold their respective grounds, and, so, no real progress can be made in science.[29] We may reply to this particular charge of obscurantism against instrumentalism that there may be devised progressively more general and convenient calculi superseding the initially narrow and cumbersome ones; but our more general reply to this and other objections of the sort will be that, it is no use telling us how nice it would be if we could keep up our traditional ideals of scientific theorising and explanation; one has to show specifically how we could keep them up. Popper has not attempted a physical interpretation of any of the abstract calculi, but only hopes that physicists will be able to do this job. However, to help them in the job he has tried to clear the philosophical ground in two ways. He has shown them the dangers of an instrumentalist view which degrades science to technology or knowledge to a craft, and he has sought to cure them of an empiricist's prejudice against dispositional characters like elasticity and field of forces. He thinks the probability of a dice casting a certain number ought to be treated as a physical property of the dice, and hopes that if we follow this principle of physical interpretation of probability we can rescue the new quantum theory from an instrumentalist construction upon it. These are surely very good suggestions but as yet too vague and remote to bring about any practical consequence, and so to convince us of the possibility of our going back to the traditional ideal of scientific knowledge.

4. *Concluding Remarks*

We have in this paper described the chief elements of the prevailing notion of scientific theory and shown how they are inapplicable in the present situation in physical science. We have in this connection referred to the sense-verificatory theory of meaning as advanced by the logical positivists and have suggested a non-denotative notion of meaning to justify the

[29] *Ibid.*, p. 380.

abstract theoretical expressions of new physics. We have in these discussions steered clear of the controversy over the concept of meaning that is current in modern logic. We may, however, mention here that a denotative notion of meaning, that says that every expression must, like a proper noun word, name something, may be working in the mind of many (besides the other notions mentioned in the essay) who protest against the abstractions of new physics. This notion of meaning is very naive. It arises out of a facile analogy between proper noun words and others; they all are symbolic expressions and we are said to understand them or grasp their meanings, so that as "John" means a person called John, other words like "dog" or "Justice" must have a corresponding entity. But a little critical reflection will reveal the worthlessness of this analogical argument for queer entities like *Dog* and *Justice* which are called subsistent objects, different from the existent ones, both mental and physical. For we understand these non-proper noun words in a manner and sense different from that in which we do proper noun words, and we mean by their meanings something different from the meanings of the latter words. We understand the word "dog" or "justice" in the sense that we know how to use them intelligently; we know what can and cannot be said with it and we do not know what it names. We know the meaning of the word in the sense that we know their sense or significance. Saying is not naming and *vice versa*. Meaning is denotatum or nominee in the case of proper names only, it is significance in the case of other kinds of words. This notion of significance in the theory of meaning saves philosophy and logic from many difficulties, for instance, the questions, where and how does the universal *Dog* or *Justice* exist, how to know it and how can it be related to its instances, how can *Pegasus*, the illusory objects or round square exist, what do the words that are prepositions, conjunctions, adjectives, adverbs and pronouns, denote ?[30] We have advanced the view of meaning as significance to justify the abstract theories of new physics, which are meaningful in this non-denotative sense. Our defence of and attribution of meaningfulness to these scientific abstractions have a wider and

[30] See Gilbert Ryle: "The Theory of Meaning" in *British Philosophy in Mid-century* (Ed. C. A. Mace, London, 1957).

more robust support than what may appear to the reader of the paper, particularly to those not acquainted with the general problem of meaning in modern philosophy.

We may also derive some indirect support for our view from the situation in modern literary criticism where too a revision of the concept of meaning is going on. Formerly, say, till the first quarter of this century, a poem, a drama or a novel, had to have some intellectual idea, some message, expressed through its artistic medium by means of suggestions. The reader or listener must know what the piece of work means to tell us or convey. It must inform and teach us indirectly while evoking in us various emotions and offering us artistic delight. It must not tell anything directly and abstrusively, but it must tell something clearly and distinctly in order not to be nonsensical. This meaning of the literary piece could be stated in intellectual terms. But this demand for some intellectual idea as the meaning of a literary piece is now replaced in many quarters by that for some image, myth or even style or form of expression that may appear to be significant and symbolic of some truth of our world and life. This evocative meaning cannot be translated into intellectual terms, yet this is no less meaningful and revealing. It is further claimed that this new kind of meaning that these works possess is the only kind possible in this advanced stage of literary art, when artists have to cope with a much richer and subtler world of human experience than what their predecessors knew of. Life has become vaster, quicker and more complicated with the expansion of our scientific knowledge about the world and our body and mind, and use of instruments of production and enjoyment, and literary artists of our time are attentive to the minutest features of this rich and complex life. They find it impossible to comprehend its meaning in such clear intellectually formulable terms as their predecessors found it possible with respect to their experience of life. So that the charge of confused seeing and unintelligible expression brought against the moderns is hasty and unjust. Does not this situation in literary criticism, where the need for a revision of the older concept of meaning of a literary piece and of understandability of life and the world offered by the piece is felt as a result of the new objective conditions under which the literary artist has to work, bear a striking analogy to the situation in our logic of science ? And does not this analo-

gical situation in a sister discipline somehow reinforce our argument for a revision of the notion of meaning and understandability in our own ? After all literature too, like science, seeks to understand an aspect of our experience, and, so, aspires to be meaningful, though the forms of this understanding and meaningfulness are different from those of science, because science deals with a different aspect of our experience. Therefore, if we find in literature a move for breaking away from the older moulds and in literary criticism a revision of older norms of understanding offered by a literary work and of its meaningfulness, then we can have some extra assurance with regard to the validity of parallel movements in science and its logic.

The Particular in Modern Physics

I

1. THE object of this essay is to examine the place of the particular in modern physics. Since the latter is the most advanced of the sciences and in some ways their representative,[1] the place accorded by modern physics to the particular may be roughly considered to be that in modern science in general, and, so, the result of this enquiry may have a wider significance than it is actually claimed here. Again, in view of the recent fashion in philosophy (*viz.*, its relying increasingly on the procedure of the positive sciences and deriving the meaning and value of philosophical concepts from their application in science and not from any abstract considerations), it is felt that such an enquiry will not be devoid of philosophical significance. The particular has been a recurrent problem in the history of philosophy and the solutions advanced by the pure philosophers from time to time have differed widely because of the different philosophical premises from which these thinkers proceeded. Of course, the problem of the particular cannot be solved apart from the connected problems of metaphysics and epistemology, yet to a modern investigator (who is generally positivistically inclined and differs from the tender-minded idealist of the Hegelian or Bergsonian type) all the philosophical speculations about the problem appear like talking in the air with no hard ground underneath. In such a condition of mind an enquiry into the actual place of the particular in modern physics must be refreshing, for here one comes to the idea of particularity in its concrete manifestation or in its actual application to knowledge of nature, and so, it may be claimed, the idea is known more significantly. The present examination will therefore reveal to the philosophical mind some aspects of the particular which may be of help in the construction of a more comprehensive concept of the particular. Herein lies the philosophical significance of such an analytical

[1] Especially in view of the modern tendency (on the part of some positivists) to reduce all the sciences to physics and ultimately to mechanics of the most elementary constituents of matter.

enquiry as this; it is not a philosophy in itself but a help to philosophical thinking; the latter alone, we admit, can yield the final and the essential truth about the particular. (For the aspects revealed by the analytical enquiry have to be understood abstractly and then unified under a comprehensive concept, this concept, in its turn has to be related with other philosophical concepts in order to understand its full implication and to reach a comprehensive view of the matter. This task has not been undertaken here).

2. A passing note on the philosophical view of the particular will be helpful towards appreciating its place in physical science. The particular has been a mystery to the rational philosopher, for a particular object could not be exhausted by the general concepts; in so far as it remained a baffling irreducible it was declared to the unreal. Plato will regard a particular flower real only so far as it 'participates' in the 'idea' of the flower, in so far as it refuses to be assimilated by this general idea it is unreal. So that particularity is 'non-being' (as Plato would put it), a defect with which all existence is tainted. The essence of matter is particularity; so matter which is recalcitrant, which never perfectly participates in the eternal archetypal ideas, is regarded as non-being. (For Plato and other rationalists knowing is equivalent to being, anything not knowable, *e.g.* particularity, is non-being.) Particularity is thus ascribed to bare existence or matter without form. Existence is always particular existence for existence can only be perceived and never conceived as a general idea. The above view is a derivation from Platonic utterances about general ideas and their manifestation in matter, the particular is the unknowable opposite of the universal knowable ideas, sense impressions are viewed as *felt* something, mere appearances, and so disjointed from reason. Neo-platonists made this view explicit. The Platonic tradition in German and English philosophy declared the particular as unintelligible in itself, (so in a way unreal) but *somehow* involving the general (the 'universal') in reality which is a systematic whole of universals and particulars, of thoughts and things. But any empirical method of enquiry points to the defects of this view. For, as Kant showed, this systematic unity in reality is ever a demand of our reason and never an accomplished fact; we do not possess an intuitive understanding by means of which we might

grasp the mutual implication of the particular and the general. For Kant the universal is abstract, and his particular is an ultimate mystery, both having their possible origin in the unknowable *thing-in-itself*. To Kant existence is never a quality (and so an idea); his famous saying that the idea of a hundred dollars is never equivalent to hundred dollars and his criticism of the ontological proof of God show conclusively that the particular (*i.e.*, bare existence) is never self-justified, *i.e.*, it is incapable of being deduced logically from any general idea or category. The categories never apply to the details of experience, the latter are data and we have to depend for their appearance on the unknowable *thing-in-itself*. The problem of the validity of particular judgments baffled Kant and he tried to solve it in his *Critique of Aesthetic Judgment*, holding that these have no objective validity of the kind claimed by universal scientific judgments, yet these claim a kind of objectivity and are not purely subjective. No universal and necessary concept is the ground of such particular judgments yet there is a ground which Kant calls 'purposiveness without a purpose or a mere form of purposiveness'. Whatever be the exact meaning of Kant it is certain that for him particularity is not an objectively known character of things, there is something unique and inexplicable in it. Kant, by separating intuition and understanding, separated the particular from the general and, so, made the latter abstract and the former unintelligible. (Intelligibility implies assimilation by means of general concepts and relating to other concepts, a particular as such is refractory in this respect).

Kant is not a thorough-going empiricist, so he does not give the particular a status higher than that accorded to the general. In other words, for him, difference is as real as identity. (A particular implies difference, a general implies identity). But the empiricists, like Hume and Comte, and the logical positivists, like those of the Vienna circle, regard all general ideas as nominal, reality for them consists essentially of differences, the human mind, like a sorting machine, sorts out the classes of similar objects or qualities and classifies them under certain general names. The latter are the concepts and categories which have no *a priori* validity or substantial being apart from their concrete instances. A concept is but a 'compendious' representation of the actual (says Mach) or a 'mental summary of facts' or a

'short-hand' for a class of similar phenomena.[2] Bergson and William James have attacked the rationalistic view of concepts from another side. They hold that man for his practical need for manipulating the world has carved out certain broad features out of his experience-flux which is essentially fluid. The concepts of things, according to them, are our mental creations and their validity rests on their practical application. Since the latter term is vague (as it has no general and fixed meaning) we do not know what to make of this theory, but the empiricists have a perfectly clear theory of the particular and its relation to the general. They hold sensation to be the bed-rock of all knowledge and so the particulars are to them the basic stuff of knowable reality. Empiricism, put forward by Locke, Hume, Mach and others, stresses difference more than identity and sense-impressions more than reason. Logically this reduces itself to a kind of solipsism,[3] for there is no provision in this system for the inter-subjective communication which is required by valid knowledge. If the elementary sensations are regarded as the only dependable source of knowledge one cannot get beyond one's own private sensations and so cannot reach any objective knowledge. This is a common criticism of the empirical view of the particular (and the general) and it is not unjust.

3. Thus both the rationalistic and the empirical accounts of the particular are defective, the former makes the particular a mystery and the latter makes knowledge an impossibility (for knowledge implies communicability and the empiricists cannot explain the latter). Modern physics has adopted radical empiricism as its working philosophy. We are not concerned (here in this essay) with the truth or falsity of this philosophy, we will observe the fact of its operating in the minds of the theoretical physicists and influencing their physical methods. Though physical method has been affected in the recent times by the philosophical assumptions regarding the particular yet it is better for our purpose in this short enquiry to reach the latter from the former. We will, therefore, by an examination of the physical methods enquire what place does modern physics give to the

[2] See for instance, E. Mach's *The Analysis of Sensations* (preface to the 4th edition). K. Pearson's *Grammar of Science*, pp. 206-08.

[3] See Wienberg's *An Examination of Logical Positivism*, Chapters VII and XIII.

particular. Our method will be thus analytical, it will pass from the practice of the physicists to their philosophical assumtions and not *vice versa*. It will be seen that modern physics has of late made great allowance for the fact that the particulars are the ultimate given and that difference is more fundamental than identity.

Formerly, in the 17th and 18th century, the physicists believed that all the characters of nature could be known by finding out the quantitative laws of recurrence of phenomena, and they held space-time location as a character which could be explainable or deducible from certain general laws. This was a naive view-point, for space-time location (which is a characteristic of the particular), is not a quality (as Kant and later W. P. Montague pointed out) to be subsumed under a universal and deduced from it. The classical physicists were not critical enough to distinguish character from existence. Also they could not see that the laws of nature are but summaries of the behaviour of particulars, with their help alone we cannot predict a particular event; for prediction we must have prior data or particulars. The laws of physics are not explanatory but descriptive only.[4] Mach first pointed out this truth and Kirchoff introduced it among the physicists. To bring causality for explaining the particular is vain even if we assume that strict causality holds in nature. For causality holds between particulars only and at the most it can lead us a few steps backwards in search of the supposed explanation of a particular occurence. It cannot lead us very far for the cause means the sum-total of conditions and *theoretically* the cause of an event comprises *all* the antecedents (the world being a complex whole where each element involves the rest of them). Even if we take the imaginary case of an isolated causal chain we cannot explain a link in it (in the sense of deriving it from some higher category) for the kind of explanation by tracing antecedents will land us in an infinite regress. Any particular space-time location can be indicated by means of other particulars, the origin of reference-axes must itself be a particular which has to be intuited. To maintain[5] that the particular space-time location can be resolved

[4] See *The Type of Causal Explanation*, by R. Von Mises in his book *Probability, Statistics and Truth*, pp. 285-87.

[5] As does B. Blanshard in his *Nature of Thought*. See Chap. XVII.

into universals is to overlook the fact that positions in the space-time frame must be relations to the origin, and this cannot be further resolved into any relations. Relations are general but the positions are particulars. Relations can be conceived and are communicable, but positions have to be intuited. Yet the latter are not subjective; though no universal predicate can be added to a particular 'It' yet the assertion 'It is' claims objectivity. There must be an objective correlate of the subjective feeling of 'otherness' which attends a particular perceived event.

Classical physics was slow to realise the full implication of the particular, especially the truth that it is an ultimate irreducible which, nevertheless, cannot be dismissed as a subjective affection or a mere logical category. That it exists as an unintelligible surd has been recognised by the modern scientists in their own way.

Thus W. R. Thomson, the famous biologist, writes, "We must not expect to constitute a science of purely individual phenomena. The idea involves contradiction. We cannot hope to evolve a general method of predicting absolutely unique events, such as the exact path of an individual electron at a given moment. Their uniqueness precludes genuine scientific treatment. We need not delude ourselves with the belief that the unpredictable character of such events is in any sense a real argument against the principle of causality or a proof of the freedom of the will. An inability to deal with individual phenomena is not precisely a positive defect in our knowledge, it is simply one of its necessary conditions. Our science really does take hold of Nature, so far as Nature is really intelligible. A certain unintelligible residue is left behind, but this residue is fundamental to material things, and could never be incorporated in any scientific systems."[6]

Bertrand Russell,[7] and following him, Eddington,[8] also realised that 'the essence of individuality which always eludes words and baffles description', must be for that very reason 'irrelevant to science'. Whether it is irrelevant to science is an open question for it involves whether the individual element can

[6] *Science and Commonsense*, p. 25.

[7] See his *Introduction to Mathematical Philosophy*, p. 61.

[8] See his *Philosophy of Physical Science*, p. 150-152.

be wholly dispensed with and the general not affected at all by this procedure. However, we need not go into this problem just now, it is sufficient for our purpose here to note that the modern scientists have recognised that the particular eludes the grasp of scientific method of research and that this particular is the essence of matter, the stuff, of whose structures or forms are sought and known by science. So Eddington writes, "In the intervening years (between 1919 to 1939) the importance of digging out the structure from its inessential trappings became recognised, and it was noticed that in the Theory of Groups in pure mathematics the necessary technique had been developed. Moreover, the idea of structure, which had previously been rather vague, was found capable of exact mathematical definition. Consequently to-day it is not merely a truth hidden in our physical knowledge but physical knowledge in its current form that we recognise as structural."[9]

This is seen in the concept of waves used in Wave-Mechanics and in the concept of curvature used in Relativity theory. Both are pure forms and are modern substitutes for *energy*, which was the successor of the classical philosophical concept of *substance.* In what substance are these waves formed or these curvatures made is now meaningless to ask and is set aside in the lumber room of physics. The physicist now-a-days does not bother about the stuff (mass or energy) of which the world may be composed, he is concerned with the structure which alone is knowable. "Science has been characterised as a search for system (order, constancy amidst diversity and change). The idea of isomorphism is the clearest expression of what such a system means."[10] Thus the physicist dismisses 'the individual elements by assigning to them symbols, leaving it to non-mathematical thought to express the knowledge, if any, that we may have of what symbols stand for"[11] The abstract mathematical relationships are all that are known in science. By structure the physicist does not even mean a mechanical model which may be imagined. Jeans says, "The making of models or pictures to explain mathematical formula and the phenomena

[9] *Ibid.*, p. 153.

[10] See Cohen and Nagel: *An Introduction to Logic and Scientific Method*, p. 139.

[11] Eddington: *Philosophy of Physical Science*, p. 142.

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[10] See Cohen and Nagel: *An Introduction to Logic and Scientific Method*, p. 139.
[11] Eddington: *Philosophy of Physical Science*, p. 142.

they describe, is not a step towards, but a step away from reality; it is like making graven images of a spirit."[12]

Schroedinger's wave-mechanics or Heisenberg's new quantum mechanics do not give us any imaginable models, they do not believe that reality is picturable, rather it is, like a mathematical formula, conceivable. The Wave Mechanics of Schroedinger requires an indefinitely large number of dimensions of space-time and the quantum mechanics of Heisenberg is altogether a symbolic conception of reality. Lenzen expresses this state of affairs thus : "It is possible to denote the character of an atomic system in a given state by symbols, such that the symbols may be represented by matrices which exhibit the possible results of measurement. The elements of the matrix are the numbers which express the results of a measurement with a calculable probability. We may say that quantum mechanics initiates a symbolic conception of nature."[13] This physico-mathematical method means that the mathematical and the real world touch in number. Its utility lies in the fact that from the mathematical formula certain numbers follow in conformity with natural processes. This numerical coincidence has been given greater importance than our immediate intuition of the physical correlates of the mathematical formula; we need not intuit a four-dimensional space-time, (so the physicists maintain); if by regarding time as a space co-ordinate (and so a fourth dimension) we can obtain numerical values that agree with certain experimental results then we have to believe in such an unpicturable yet mathematically intelligible representation of physical reality. Thus there may be pure thought without picturable representation of it. Some scientists, however, do not like this procedure in science, they are not content with abstract mathematical formulas of modern physics and want picturable models. W. R. Thomson, for instance, maintains that—"The fact that the formulae had produced the correct numerical values has nothing whatever to do with the views on space and time involved in its construction, is in no sense a proof of the validity of these views of which the status, which is to be judged by comparison with the immediate intuition of space and time furnished by our

[12] *The Mysterious Universe*, p. 141.
[13] Lenzen: *The Nature of Physical Theory*, p. 268.

senses, depends purely or simply on their intrinsic characters."[14]

But such objections against abstractionism (or Pythagoreanism) are drowned by the graver voices, those of Einstein, Schroedinger, Heisenberg, Born and other physicists of the top rank. They accept an abstractive mathematical conception of physical reality as a valid and the only possible one.

Einstein has noted the "ever-widening gap between the basic concepts and laws on the one side and the consequences to be correlated with our experience on the other",[15] but he points to the justification of our abstract conceptions : "Reason gives the structure to the system; the data of experience and their mutual relations are to correspond exactly to the consequences of the theory. On the possibility alone of such a correspondence rest the value and justification of the whole system, and especially of its fundamental concepts and basic laws".[16]

Schroedinger, interpreting Heisenberg's Indeterminacy theory, says that nature does not contain more than a definite amount of structural details; there are gaps in it. He writes, "If Heisenberg's assertion be correct and if it appears at first sight to make gaps in our picture of the world which cannot be filled, then the obvious thing to do is to eliminate the regions which refuse to be filled with thought, in other words, to form a view of the world which does not contain those regions at all".[17]

Now all these assertions of the veteran physicists show that they have ceased to give any importance to the demand of intuition (*i.e.*, immediate perception) in their physical theories which have become purely formal or structural couched in the abstractive symbolical language of mathematics.

In the light of our question (which is about the place of the particular in modern physics) we find that the physicists have dismissed the particular from their science and have gone after the general structures of the physical reality. For the picturable

[14] W. R. Thomson: *Science and Commonsense*, p. 91.
[15] *On the Method of Theoretical Physics*, p. 8.
[16] *Ibid.*, pp. 8-9.
[17] *Science and Human Temperament*, Chapter VII.

existence corresponds to the particular, the physical stuff of the Universe which 'participates' in the general structures. This is Plato's 'non-being', the unintelligible surd in nature. Classical physics thought of explaining away the particular, the bare substance, for it was not fully conscious of the refractory nature of this particular; modern physics has felt it and so has dismissed it from physics. Thus modern physics has preoccupied itself with the identities in nature and left out the differences, though it is universally admitted that one can reach identity only through comparing particular instances which may be identical in structures but different things or specimens. It is a paradox, in scientific methodology that science proceeds from its data, that are particulars, to its results that are generals. The particular (or the substance) does not feature in the result (the finished physical theory) but it serves one purpose, it confers on the physical formulations objectivity without which these conceptual structures (expressed in mathematical formulae) would be mere schemata with nothing to apply to, inventions instead of being discoveries.

4. We saw how modern physics proceeds to structural identities without bothering about the matter of these structures. This matter is intractable because it is essentially perceptible and not intelligible, it is the cause of difference between two particular instances (of some general form) which is the same thing as saying that it confers individuality on things. Modern physics recognises this individual element in reality but finds no way to incorporate it into its knowledge which is purely conceptual. In the next section we will see how modern physics recognises this individual element in nature and so formulates statistical laws instead of rigorous deterministic ones. (But one thing must be noted at once. The quantitative laws of the classical physics are even now formulated in the form of deterministic ones but their statistical character has been recognised; again, the statistical laws themselves are expressed in the form of differential equations of classical field physics but the symbols related by these equations stand for probability functions which in their turn symbolise quantum processes). The deterministic laws assumed uniformity as fundamental in nature, the laws assume difference as more fundamental. The latter kind of laws are to describe but average nature of things, the

elementary particles and their movements are not regarded as exactly uniform, rather it is believed that they have all kinds of individual differences within a certain range, and physics being unable to know these details has to content itself with averages.

5. We will see now how the statistical laws of physics (and the laws of physics, it will be seen, are essentially statistical though deterministic in form) presuppose difference as more fundamental in nature than identity which is but a rough average struck by the mind of man confronted with difference and unable to follow it to its minutest details. This means that statistical physics has recognised the particular as the principal category of physical reality and the general as a mental construct or a conceptual model having no exact physical correlate in the objective world. For the general is arrived at by a process of averaging and there cannot be an actual instance of the general in the sense that no actual element of a class of like things can *exactly* have the value got by averaging the whole set of values (corresponding to the set of elements). These values will form elements in a collective (*i.e.*, a random series with *theoretically all* possible values lying between two limits) and it is highly improbable that their mean coincides with one of the elements of the series. Even if this mean coincides with one of the elements of the series it will at best be the representative value but cannot be held to be equivalent to the series. In a word, the individual differences may be ignored for practical purposes but they cannot be theoretically dismissed; the mean cannot do full justice to them.

II

For a fuller understanding of the issues discussed so far we have to take into consideration the different kinds of quantitative laws of physics and discuss them from our view-point. The quantitative laws of physics, we maintain, are all statistical in nature though they are cast in the form of classical deterministic equations. They can be classified for our purpose here into three kinds : the classical macrophysical laws, the classical statistical laws and the new quantum mechanical statistical laws. We will first deal with the last mentioned type.

(i) The new quantum mechanical statistical laws

Though Schroedinger advanced a wave-mechanics to express and explain the quantum processes yet a statistical interpretation of his field equations was given by Heisenberg, Born and others who developed a parallel mathematical theory of the quantum phenomena. The latter theory is equivalent to the former but more in vogue among the physicists.[18] The wave-function in Schroedinger's theory is interpreted differently in quantum mechanics.[19] However, what we are here concerned with is to note that the quantum mechanical statistical laws are held to be better representatives (or descriptions) of the quantum phenomena than the wave-mechanical ones, and therefore, we need but examine the former in order to expose the presuppositions (regarding the particular) of quantum physics.

For an adequate knowledge of an individual electron or quantum we have to know precisely and simultaneously its position and velocity at an instant. But Heisenberg's principle states that it is fundamentally impossible to measure at the same time exactly both the position and velocity of the particle. The two quantities, velocity and position, are canonically conjugated, if one is determinated the other is completely indeterminate, and the product of the discrepancies in the two values is a fixed magnitude.[20]

Two things must be noted about this principle. First, the uncertainty introduced in the measurements are not subjective but objective in a sense, it is due to the interaction of the light quantum on the electron under observation. Since the swarm of light quanta form a 'collective' (*i.e.*, a random statistical sequence) their disturbing effects cannot be allowed for and a corrected result obtained as it is possible in classical deterministic mechanics. Secondly, the uncertainty is very minute, of the order of 10^{-27}, so that if we measure lengths and velocities to

[18] See Lenzen: *The Nature of Physical Theory*, p. 264-265.

[19] If ψ is the wave-function and ψ' its conjugate $\psi\psi'$ represents for Schroedinger *density of electricity*, the electron being considered not a discrete body but an electric charge spread continuously throughout the field. The statistical interpretation of ψ is that it is the *probability* that an electron (a discrete body) is in the region of volume dxdydz.

[20] If Δp and Δq are the uncertainties in momentum and position, then $\Delta p\ \Delta q > h$, where h=Planck's constant$=6\ 55 \times 10^{-27}$ erg secs.

10^{-13} (which is sufficiently 'fine') the Heisenberg theory will not preclude the possibility of measuring both these quantities without a discrepancy in the result, in other words, our measurements to 10^{-13} are not fine enough to detect an error in measuring simultaneously the two conjugates, velocity and position of an electron. This is of great practical importance but this does not make any difference in our theoretical outlook. For we have to recognise an uncertainty that is in the nature of our knowledge however small that uncertainty may be. We do not bother if we cannot predict the beginning of an eclipse of the sun to 10^{-12} secs, but the recognition of this limit to accuracy as fundamental in our measurements has much theoretical importance. And it has its philosophical significance too which we will discuss presently.

One philosophical significance which concerns us here is that quantum physics gives up the hope of knowing exhaustively and precisely the individual electrons. Though individuality of an electron is not equivalent to a function of its particular place and time, yet the latter must be one of the characteristics of individuality and a step towards it. Heisenberg's principle asks us to reconcile ourselves to gaps in our picture of the world, these are given in the nature of our knowledge of the physical world, and in this sense objective. We seek to picture the world to the minutest details but the latter are denied us, nature herself hides from us the finest details. This is what Heisenberg himself seems to imply, 'the conjunction of velocity and position is not accurately determinable.'[21] The philosophical implication of this is that the individual element in nature is only approximately knowable, nature will never allow us to probe deeper than a definite limit.

But this view accepts the existence of the individual element in nature, that is to say, the particular. Philip Frank[22] and others seem to interpret Heisenberg's principle to mean that the conjunction of velocity and position has no meaning. They say that a particle that has no definite position and velocity loses all sense or significance. This interpretation seems to make the

[21] See S. Stebbing, *Philosophy and the Physicists*. P. 201.

[22] See Philip Frank: *Between Physics and Philosophy*. p. 159. See also Eddington: *Nature of the Physical World*. p. 221-2.

individual element in nature a meaningless entity. The attitude of these interpreters is similar to that of the philosophers like Green and Bradley who declare a bare particular to be a mere appearance and as meaningless 'non-being' (being is identified by these idealists with knowing). A third interpretation[23] of Heisenberg's principle is possible. According to this the gaps (or uncertainties) are not in our knowledge but in nature herself, nature does not hide her minutest details from us, she does not contain them. To try to describe the position and velocity of an electron beyond a certain fixed limit of accuracy is vain not because our apparatus interferes with the object of investigation but because the object has not the supposed values beyond that fixed limit. This is extreme positivism and assumes that what is unknowable is non-existent. However we are not concerned with the legitimacy of this interpretation of Heisenberg's principle just now. What we have to note is that this interpretation assumes that the bare particular is non-existent or mere individuality is an illusion, identities are real. (Philosophically this position is self-contradictory, for identity presupposes difference; the individual and the general are logically interdependent).

We thus see that the Heisenberg's principle, however interpreted, leads to the rejection of the particular as either a partly known (but existent) or totally unknown and meaningless entity.

This conclusion may be denied by some physicists[24] and philosophers[25] who still believe that the uncertainty involved in measurements in quantum physics is only subjective and in course of time we may device means to follow the individual electrons to the minutest details. This is a dualistic attitude which separates knowing from being, and it is not quite in vogue among the scientific philosophers who are mostly positivistically inclined. So that we do not give much importance to this view-point which, no doubt, confers some status on the particular though it accepts that scientists have not been able so far to describe it. And this is the weakness of this view-point, it relies on the future and believes in things not known as yet, and what is more, shown to be unknowable. A realist may well assert

[23] See Schroedinger's *Science and Human Temperament.* Chapter VII.

[24] Amongst them Einstein himself. See Plancks' *Where Science is going?* p. 202.

[25] See A. O. Lovejoy: *The Revolt against Dualism.* p. 286-292.

that there is a black phantom in a dark room which will disappear as soon as the light is on, we cannot refute him, neither can he prove his case. So it is better to hold judgment regarding this assertion. This has been the case with the realists, in scientific philosophy. Our task here is not to criticise these realists, we are to see what place is accorded to the particular by the physicists, that is, our task is mostly descriptive and not speculative. Since we find that the number of realists among the physicists is fast dwindling away, it is fair to conclude that the physicists do not believe that the particular is knowable, (the realists believe in it though it is but a faith, philosophical or temperamental in origin, and has not become knowledge). Now, as noted before, some physicists, (the positivists) do not also believe in the particular as a real entity. This is also an extreme view-point and can be objected to on the ground that Heisenberg's principle loses all meaning if we declare a particle with exact velocity and position as a meaningless term. So that the very basis of the principle of indeterminacy is destroyed if such a positivistic interpretation is put on it.

If we ignore the extreme positivistic and realistic interpretations as speculative and admit only that which is descriptive and does most justice to the principle, we see that modern quantum physics accepts the particular yet admits the impossibility of grasping it by means of any law or general notion. This is the interpretation given by Heisenberg as a physicist and we should regard it as more faithful to the original physical theory than the philosophical ones given by others. (We are here working out the implications of physics and not those of the philosophies of physics.)

(*ii*) *Classical statistical laws*

These laws were first formulated to explain the observable properties of a gas, such as its volume, pressure and temperature. The latter macroscopic phenomena were studied and their laws discovered, *e.g.*, the gas law[26] and the two laws of thermodyna-

[26] $\frac{PV}{T}=R$, where P=pressure, V=volume, T=absolute temperature and R=a constant.

mics.[27] These phenomena and their laws could be explained on the basis of a Kinetic theory of gases which assumes a gas to consist of a large number of minute elastic molecules having at a time all sorts of positions and velocities lying between two limits, that is, molecules having a certain statistical distribution of positions and velocities. It is assumed that the macroscopic processes are the average resultants of microscopic phenomena. Thus, *e.g.*, macroscopic pressure of a gas is the time-average of instantaneous forces exerted by all the molecules of the gas striking the sides of the container, and the macroscopic temperature is correlated with the average Kinetic energy of the molecules.[28] The gas laws giving the law of change of temperature, pressure and volume can be deduced from these assumptions. Again, the thermodynamical laws can be explained with the help of this Kinetic theory of gases; the first law (of mechanical equivalent of heat) can be readily understood in its light, as heat is correlated with energy of the gas molecules.

The second law is also deduced from the Kinetic theory, the entropy at a time has been found to be proportional to the logarithm of the probability of gas molecules remaining in a certain state of distribution of position and velocities at that instant. A gas tends to pass from a less probable to a more probable state (of its position-velocity distribution) and so the entropy tends to reach a maximum. There are certain distributions which are more probable than others; generally we may say that a random distribution is more probable than an ordered one; the molecules of a gas, left to themselves, tend to become more and more random or disorderly.

This kind of statistical interpretation has been successfully given to other macroscopic phenomena, such as the Brownian motion and radioactive radiations. Thus it is assumed in their cases also that the macroscopic phenomena are dependent upon

[27] The *first* law states that energy is conserved; there is a mechanical equivalent of heat. The *second* law states that entropy in an isolated system always increase till it reaches a maximum; entropy is the thermal state of a body or system such that if it is represented by S the differential $dS = q/\theta$ where q is an infinitesimal quantity of heat which is reversibly added to the system at a temperature.

[28] Pressure $P = 1/3\ mnv'^2$ where m = mass of a molecule, n = number of molecules per cubic centimeter of the gas, v'^2 = mean square velocity of the molecules. *Temperature* $T = \frac{1}{2}\ Km\ v'^2$ where K = a constant.

microscopic processes. Now the point to be noted for our purpose here is this : it was assumed by the classical statistical physics that classical deterministic laws were valid for the movements of individual atoms or molecules and statistical laws were but applied to large-scale phenomena due to *practical* difficulty of following the individual microscopic processes. Probability calculus answered to the needs of the problem and explained the macroscopic facts which were large-scale approximations of microscopic processes. Now it is this basic assumption regarding the small-scale phenomena (*i.e.*, the movements of single atoms and molecules) which is objected by modern statistical physics and can no longer be retained. It is true that just as we have differential equations applicable to large-scale phenomena we have also differential equations in the field of small-scale processes by means of which we can predict from initial conditions some later ones. But this deterministic form of the statistical laws should not be taken for determinism, for these differential equations apply to distribution functions which are probabilities and not exact certainties applying to individual particles. Now the reason against retaining the classical assumption of the determinism in the small-scale molecular phenomena are two : logical and factual. Let us discuss these.

The logical objection was first made by Ernst Mach[29] who showed that large-scale behaviour required by the second law of Thermodynamics had never been and could never be deduced logically from the operation of mechanical laws on the small scale processes. In a completely elastic system nothing like an increase of entropy can be expected; also an absolutely conservative system cannot behave as a system approaching a definite final state. As R. Von Mises puts it, "a statistical conception on a large scale is logically irreconcilable with a deterministic conception on a small scale, statistical laws cannot be derived from the differential equations of classical mechanics".[30] This means that chance cannot be derived from strict determinism. It is sufficient for our purpose (in the present enquiry) to note this logical flaw in the basic assumption of classical statistical physics, the

[29] See relevant quotations from E. Mach's thesis in R. Von Mises' book *Probability, Statistics and Truth*. P. 258. Mises supports Mach.

[30] *See Ibid.*, P. 259.

actual flaws in the mathematical deductions committed by Boltzmann and others need not be discussed here.

The second objection made against the classical assumption of determinism operating in the case of individual molecules is factual. We have seen how due to the interaction of the light quanta (which form a statistical sequence) it is impossible to measure both position and velocity of an electron accurately beyond a certain limit. Atoms and molecules are far bigger and heavier bodies[31] and the indeterminacy in their case is proportionally smaller.[32] Yet theoretically, and from a philosophical point of view, the fact that this indeterminacy exists has significance. Thus the concept of determinism operating in the microscopic field is not applicable beyond a certain limit.

Thus we conclude that, *first*, the classical statistical laws are indeterministic though deterministic in form, *secondly*, its assumption of determinism operating in the individual elements is unjustified. Individuality has remained beyond the grasp of classical statistical physics as it has done with respect to new quantum mechanical physics.

(*iii*) *The classical macrophysical laws*

These are the general laws of mechanics which apply to large bodies, large in comparison to atoms and molecules. It is clear that in the case of these the Heisenberg Uncertainty is negligible as the light quanta hitting these large bodies cannot produce any measurable change in the position or velocity of the body which is incomparably heavier than a light quantum. But here we come across a new difficulty. A macrophysical body is made of millions and millions of molecules which are always in a state of agitation.[33] The measuring rods themselves are such composite bodies. To speak of an absolutely definite length of a rod is to speak of something that does not exist. The ends of the rod are not at all fixed if we make a microsocopic examination

[31] *E.G.*, a hydrogen atom is about 2,000 times heavier than an electron and an oxygen molecule is 32 times heavier than an hydrogen atom.

[32] The reason for this is that the light quanta hitting the heavier bodies will produce smaller changes in the velocity than they would when they hit lighter bodies like electrons. The change in momentum $\Delta p = m \times \Delta v$ sc as the mass m increases the velocity change Δv decreases.

[33] These are of two types: Heat motions and 'Zero-point vibrations'.

of them fine enough to discover the molecular agitation. The length of a rod is the distance from the mean position of the molecules at one end to the mean position of the molecules at the other end, clearly this value cannot be obtained with an accuracy beyond a certain limit. A magnitude of this kind cannot be measured with an absolute exactitude because it is connected with a statistical system such as large masses of molecules.[34] The values of position and velocity found for a large body are thus statistical averages and so the dynamical law connecting these quantities are essentially statistical though deterministic in form.

Suppose we have two rods of length 1.25 mm. and 1.26 mm. measured up to the second decimal place of a millimetre. If we agree to measure lengths to the first decimal place we would declare them 'exactly' of the same length. If we carry our measurements to sufficient accuracy we will find that after a certain limit there cannot be any further accuracy, the limit being set by the agitation of the molecules. This means that it is unscientific to regard a macroscopic body as having an absolutely fixed position and velocity at a moment.

The position given to it is the mean of the position of its randomly vibrating molecules and the velocity is that with which this mean position changes with respect to some fixed frames of reference. Thus the particular mechanical characteristics of the body remain vague beyond a certain limit and have no reality (from a *positivistic* point of view).

Now it may be objected that the molecular agitation is a process which can be followed in detail and a body being the aggregate of these molecules, its individual characteristics can be (in theory) known with accuracy. But such an optimism is frustrated by Heisenberg's principle. As we saw in (*ii*) there is an objective limit to the accuracy with which we may measure the conjugates, velocity and position, of a molecule. Since these exact values of these conjugates are myths, the individuality of the aggregate (the body) is also elusive, a form of thought without content or significance. The body as occupying some exact point in space-time like a geometrical point is only a

[34] See R. Von Mises: *Probability, Statistics and Truth*, p. 297.

conceptual symbol or a limiting idea which simplifies thought but have no perceptual equivalent in nature.

So that the macrophysical laws too, which connect the position and velocity of a body at two moments, should not claim to have assimilated the individual element in the macrophysical bodies. They cannot predict with absolute accuracy the space-time location of a body at an instant because the initial data supplied can never be accurate. And what is important to bear in mind is that this inaccuracy is not subjective, but in a very significant manner, objective.

Thus from every respect we find that it is impossible to grasp and specify the individual characters of a body, either macrophysical or microphysical. The quantitative laws of physics do not apply to the very details of natural processes. This implies that the individuality of a body is something to be felt (and so something real) but not communicable through any universal concept. Physics cannot thoroughly capture it and assimilate it by means of its general concepts and laws. Physics only touches the fringes of the particular, it beats about individuality but cannot crack the hard nut, cannot reduce the irreducible residue. Yet physics has to admit it as 'out there', something real, a physical correlate of the psychical phenomena of immediate perception. Philosophy of the Hegelian sort may give any interpretation of the particular and so can reduce it to a bare 'nothing' or 'mere appearance', but physics cannot take the recourse to such an absolutism or eternalism. Physics reaches its general notions and laws explicitly from the particular data supplied by immediate perception and so it cannot dismiss the latter as nought. It cannot destroy its base. Though scientific knowledge consists of general notions and laws, science cannot adopt an intuitionist view of these generals and regard them as given while consider the particular as a negation of the general or a mere logical category. Science must adopt a theory of knowledge which is consistent with the scientific method, and since the latter consists in rising from the particular to the general by slow steps, the former is empirical. So that physics cannot ignore the particular, yet, as we have seen, it cannot grasp it and incorporate it into its body as knowledge. This is the paradoxical position of physics with respect to the particular.

We have so far seen that the macrophysical and microphysical laws of physics cannot claim to have touched the individual element in nature which remains intractable. We have so far considered only one characteristic of individuality, space-time occupation or bare existence. (Existence, being no quality to be subsumed under a general, means particular existence). Of a group of molecules exactly the same in nature each has an individuality for each occupies a different point in space-time, they can be distinguished from each other by virtue of this space-time difference. If we ignore this space-time difference and consider it as unessential to individuality we may consider the molecules as identical. Each of them therefore will have no individuality in the group, just as men of the same mental and physical characters are said to be types having no individuality. It is worth while to see what place does individuality in this sense (of identical nature) occupy in physics. With regard to gross bodies it is clear that physical means can detect individual differences, a spectroscopic analysis will tell us of any difference in constitution existing in two apparently identical specimens of a thing. X-ray photography can show us the molecular arrangement in a piece of matter. There are other fine modes of distinguishing between two specimens of the 'same' substance, the little individual differences in constitution (due to the intermixtures with other substances and to different molecular arrangements) can be detected. So that physics recognises individuality in the macrophysical realm, it finds, *e.g.*, that no two samples of gold can be exactly identical, nature is such a complex mixture of things that it is well-nigh impossible to get exactly the same things, one thing is never a perfect ditto of the other. But this can be said with respect to gross things only. Physics, when it deals with the elementary constituents of matter, molecules, electrons, protons, etc., believes that these are identical particles, all the electrons for physics have the same mass, dimension and electrical charge, all the molecules of a substance, say, water, have the same mass and dimension. Now this is an arbitrary assumption and does not rest on positive knowledge of facts. Rather it rests on ignorance, for it may be that if there were finer means of studying these elementary particles then individual differences might be detected. The sameness with regard to these particles is only statistical and it is a relative term

depending on the fineness of classification.[35] Physics has so far studied the average effects of these elementary particles and so has given them physical magnitudes that are but average values. In the absence of any detailed knowledge of these particles it is more open-minded attitude to hold that the ultimate elements of the world may be individual and not the same. So does Karl Pearson believe who writes, "It is no discredit to the great structure of modern physical chemistry to assert that the absolute sameness of the molecule is only a statistical sameness, and that an ultimate individuality, a variation within the class, may be hypothecated as a means of describing new developments which may hereafter be observed when the powers of discrimination are finer."[36] Modern physics recognises individuality of this kind though it is rather intractable just as it finds individuality of the other kind (discussed before) undeniable yet not amenable to scientific method of knowing.

[35] See Karl Pearson's *Grammar of Science*, pp. 155-6.
[36] See *Ibid.*, p. 156.

Science and Epistemology

1. We propose here to enquire into the epistemological presuppositions of science. The view we shall be presenting is the following. Science adopts a realistic theory of knowledge as an implicit creed underlying its actual practice or methodology, but changes over to an idealistic and sceptical theory as it reflects upon the matter in its own way. This sophisticated attitude to knowledge conflicts with the practice of science, and the only way out for science from this awkward situation is to recognise the narrow and dogmatic character of its *own way* of epistemological reflection. This way is marked by the verificatory theory of meaning which may well hold in science but not in philosophy. In other words, the scientific objects may be required to be empirically verifiable but not the philosophical ones that are presupposed by the former.

2. Let us then examine the practice of science first to bring out its implicit epistemological faith. Now we know science starts with perception and it implicitly identifies the perceptual contents or data with the existent objects, which are thus held to be perceived *as they are*. The objects enter the mind, so to say, and of course, they are perceptible and usable by right. So that perception is taken as an ultimate fact and so are perceptual truth and existence. This is realism and the faith implicit in commonsense also, which, in fact, has handed down this faith to science, its child, though more refined and progressive. Now science unreflectively holds that objects exist out there and they are perceived by the scientist truly. Yet errors have to be admitted. But they do not perturb science greatly or shake it out of its cosy realism when it is in its unconscious and practical mood in which it treats them as sheer accidents or wild data requiring no explanation. They do not rouse the practising scientist from his "dogmatic slumber" and lead him to a wakeful reality of subjective idealism. Confronted by errors he takes up the following attitude. Truth is the general law of perception and error is exceptional. Reality is coherent and so an error is to be detected by its incoherence with the general body of knowledge. To

minimise errors we have to be careful in our observation. In the case of measurements we should repeat them where possible and take their average. This is because errors are accidental, and as we do not know why we perceive truly, we cannot also know why we sometimes err. So we cannot have a rational and fool-proof method to avoid errors. The method of averages will help us to minimise error. Thus science manages its errors, keeping itself within the fold of a realistic faith. It only adds a few more items in its working faith.

3 Let us now see what happens when science gives up the unconscious and practical attitude of commonsense and reflects upon perception, truth and existence. With regard to perception it gives up the faith that the content of perception is identical with the object, for the latter is never perceived apart from the former. The content is perceived; an extra-mental object beyond it is merely supposed. The latter cannot be inferred from the former, for the obvious reason that their concomitance has not been established through prior perception of them. Inference can establish only an object perceived before and found connected with another object from which it is inferred. Thus science, following a strictly empirical theory of meaning, will reject the object of perception as a meaningless term. (Of course it will deny theoretical meaning to the term and not poetical or emotive meanings). If, however, a perceptible cause of the content of perception be supposed to be there, such as atoms or waves, outside the perceiver's body, acting upon the physiological apparatus inside, this will not help to establish the extra-mental object of perception; for the simple reason that when this cause is perceived in its turn, it will become a content of this second perception requiring another objective cause, thus landing one on a vicious regress. So that science cannot go beyond the actual content of perception to posit an object and, thus, cannot transcend the immediacy and subjectivity involved in such a knowledge, which is in fact not knowledge proper, but only an appearance of knowledge. The scientist, in his reflective attitude, therefore, has to express his so-called (perceptual) knowledge in the form, "This *appears to be* so and so", and not as, "This *is* so and so". He has to give up the materialistic *object-language* and adopt a phenomenalistic *appearance-language* in its place.

Now since science cannot speak of the object of perception and is confined to the content, it cannot also speak of truth and falsity of perception. It, however, does speak of truth and falsity using as the basis of this distinction the principle of coherence as noted before. But this is just a methodological principle for science which it cannot prove in its reflective attitude. For, that reality is systematic and coherent and, so, false perceptions are incoherent, is both a psychological and methodological presupposition of science but not a verifiable scientific principle. Science can neither prove nor disprove it, but only believe in it and use it as an operationally *a priori* rule and not a logically necessary principle. For science has only shown that *some* events are interrelated systematically; it cannot speak of *all* events, and its existence is quite compatible with some events being incoherent. Thus science, following its empirical creed, arrives at a rather sceptical position regarding the idea of truth. The coherence theory of truth that it adopts in practice is not supportable by its rational reflection. Moreover, it does not provide a sure test of truth, for one cannot exhaust the verificatory items, the perceptual contents, that have to be examined to see that they do not conflict with the content to be verified. And every such item has to be similarly verified. So that once we give up the simple faith in truth as self-evidential and reflect on error seriously, we cannot stop short of scepticism; the fact of error infects our philosophy of affirmation with doubt and despair. Science in its practical unreflective attitude, treating error as accidental and adopting a coherence test of truth, stops at a half-way house which it has to leave for a sceptical destination as soon as it starts reflecting on error more seriously and systematically. Now it might be imagined that science may find certain physiological or psychological concomitants of true perception which it may use as the test of truth. But this is vain thought. For, *first*, no such concomitants have been so far discovered by science; *secondly*, the criterion of truth to be used initially by science while it would seek to establish such concomitant relations is itself not sure, as we have noted above; *thirdly*, this antecedent determination of truth of perceptions by the coherence method renders the concomitants worthless as conditions or evidence of truth; and *fourthly*, these concomitants must themselves be truly perceived, thus involving the enquirer in an infinite regress.

With regard to existence too science undergoes the same change of view as it changes from an unreflective to a reflective attitude. In the former attitude, science takes objects to be existing and revealing themselves to man. But with reflection it finds that existence or reality, as distinguished from illusion, is not an empirical character, and so knowable by science. Science cannot directly distinguish by perception between a real chair and an illusory one, for both are ostensibly perceived, and the latter taken for an existent until the error is sublated. The cause of this error is not known to science which, as we noted before, holds truth as normal and error accidental, and there is no rational way for it to tell a true perception from a false one, and so, correct it, except by means of the coherence test which, as we have seen, is neither scientifically sound nor theoretically sure. If we apply the scientific method to the question of existence, the result would be this. Nothing really is known to exist, for we perceive only the contents of our mind and no object beyond them independent of our perceiving. If we adopt the coherence theory of truth, we may say that the more coherent a system of perceptual contents the more will be the probability that their objects exist. So that, since an absolute all-inclusive system is only an ideal, existence is always relative. Thus science, following its empirical theory of meaning, can speak of an existence that has degrees, if it speaks at all. It does not really believe in existence as the latter is ordinarily known. For existence cannot have degrees of probability, it is only our *knowledge* of it that may have these degrees. An object, may either exist or not, it cannot have a certain degree of existence.

4. We have so far seen how science, following its empirical theory of meaning, arrives at an idealistic and sceptical position in epistemology. But this is not in keeping with its practice which requires a working realistic faith. What science then is to do about it ? We propose that science should examine one of its assumptions, namely, that the postulates of the realistic epistemology, that it adopts implicitly in keeping with its practice, should be verifiable in sense-experience. We have seen how this verifiability principle has been responsible for science to move from a realistic to a sceptical attitude, as it takes thought on the subject. Now certainly the principle is only a prescriptive rule and not itself verifiable. For the statement, "There are no

unverifiable object", cannot be verified, because such objects are *ex-hypothesi* unverifiable. It only prescribes that only verifiable statements be included in science, and this is because science deals with the sensible world to help action, while non-verifiable statements are fruitless in this respect. So that the principle of verification is a mandatory principle of action and is grounded on man's biophysical nature. Therefore it is neither true nor false, and we are at liberty to use another prescriptive principle in our metaphysical enquiries. For metaphysics may be insignificant from a scientific standpoint or from a socio-pragmatic one, but may be significant from another, say, purely theoretic standpoint. Thus instead of the principle of verification we may use the principle of imaginability[1] to prescribe what statements we should include in our metaphysics. We may now reject not the unverifiable but the unimaginable. Thus we may have a meaningful metaphysics or epistemology, though not verifiable. We may, therefore, admit the object existing apart from our perceiving it, and entering the mind as it is in true perceptions, and in an altered form or not at all in false ones. We can imagine the mind as simply and directly cognising objects and only occasionally adding to them something of its own making, and so distorting them or even projecting images in the void. Thus we can accommodate the simplest epistemological faith behind science to its practice. We can also make room for more sophisticated varieties of this realistic epistemology as their postulates are easily imaginable and, so, meaningful according to our new principle of meaning. So that science need not unnecessarily keep to a narrow principle of meaning which serves it alright, but curbs its style in deciding upon a suitable epistemology. Of course an epistemological theory has to be judged for its truth not in the ordinary manner of a perceptual statement, but by its simplicity and adequacy in accounting for the various features relating to knowledge, such as the felt objectivity and communicability of the objects known, the correlations amongst the objects known by one or many persons, and the fact of unrelated objects or errors and illusions. But the point that we wish to make here is that science can as well

[1] As Lewis S. Feuer puts it in his essay "The Paradox of Verifiability" in *Philosophy and Phenomenological Research*, Sept., 1951.

formulate its own realistic theory of knowledge in a meaningful manner and treat it as simple and adequate, and so true in this sense, to the extent that it accounts for the knowledge-situation that science comes to face. Without claiming any ultimate validity for this theory science may hold it as its presupposition without falling into such an awkward position as we noted before, namely, presupposing realism in actual operation but professing subjectivism and scepticism while reflecting upon the matter. This incompatibility between its practice and profession can be got round, if it abandons the verificatory theory of meaning, and adopts another mentioned above in its place which better suits the occasion. For actual science and theorising on science or knowledge in general are not the same thing.

Two Logical Problems and A Theory of Meaning

Problem 1

An indicative sentence, if meaningful, must express a statement which must be either true or false. If the statement is to be true, what is stated must not only be the case, but must also be capable of being otherwise and thus of falsifying the statement. We cannot know what it is for a statement to be true unless we know also what it is for it to be false. So that a true statement must be falsifiable though it is in fact not falsified. In other words, if there is a true statement it is logically possible for its contrary statement to be true and, so, to falsify it. Now consider a mathematical sentence like "2+3=5" which appears to be indicative, and so to express a statement. But the statement, though known to be true, appears to be unfalsifiable, for if we try to imagine a contrary statement, expressed by, say, "2+3=6", to be true, falsifying the original, we cannot succeed. This is because what the new sentence expresses is not a statement contrary to the original, but one quite different from it. The numerals of the new sentence, 2, 3 and 6, do not now mean what they meant in the original sentence. For their meanings are determined by a different number-system or arithmetic to which the sentence may belong. So that the mathematical sentence in question, *viz.* "2+3=5", expresses a statement that is unfalsifiable, and so neither true nor false. But this means that the sentence does not express a statement; though it may express something else, such as a proposal.

Solution : The statement *primarily* (or directly) expressed by the sentence "2+3=5" relates to a linguistic fact, to a relation of symbols. It states an equivalence between "2+3" and "5". But this relation of symbols depends on and illustrates a rule or convention for manipulating certain numerical symbols. This convention, formulated as a statement, is the *secondary* (indirect) meaning of the sentence. Since the statement of the linguistic

fact is a logical consequence of the statement of the convention, it is logically impossible to falsify it if the latter holds, and it is also logically impossible to falsify it by stating some other convention which is logically unrelated to it, so that the statement in question does seem to be unfalsifiable in principle. But we may now enquire whether the rule or convention concerned is accepted for general use or not; that is, whether the statement asserting it describes an actual human behaviour with mathematical symbols or only a possible one. If it describes actual behaviour, then the statement is true, if not, it is false. So that "2+3=5" does express a true statement because it implicitly describes some actual human behaviour with symbols and because it could be false if the behaviour were otherwise. Hence we can now say in answer to our problem that "2+3=5" expresses two different statements; one is analytic, and so unfalsifiable, while another is not analytic and is falsifiable.

Comments : (1) Acceptance and rejection of a mathematical system is not a matter of purely arbitrary choice or decision on the part of men, but of the applicability of the system for descriptive purposes. As so applied, the system is physically interpreted, that is, the symbols are correlated with certain observable features of the world and the rules for manipulating them are determined by and reflect the behaviour of actual objects. It is because of this that the system becomes widely accepted and called the "true" system while its possible alternatives are treated as purely logical games. So that although a mathematical sentence means *secondarily* a statement of a set of conventions, or rules of human behaviour, regarding the use of certain symbols, it *tertiarily* means a statement of a set of rules for the behaviour of natural phenomena in a certain field of enquiry. In other words, it not only implies or illustrates laws governing the use of certain symbols but also empirical laws of the physical world.

(2) This way of looking at the matter may be helpful in understanding the causes of, and resolving, the controversy over the question whether a mathematical statement expressed by a sentence like "2+3=5" is analytic or synthetic; and, if synthetic, whether it refers to a fact of human behaviour with symbols or some non-human physical situation. My analysis of meaning in terms of meaning-strata shows that all the rival views in the

controversy are partially correct and that they may be reconciled under a more comprehensive view of the matter.

(3) Some elucidation of the three strata of meaning of a mathematical sentence is required. The primary meaning is not usually recognized as primary; perhaps only a child who first manipulates the numerical symbols mechanically, while doing his arithmetical sums, means by them nothing else than the numerals. The physical interpretation of these symbols in terms of classes of things, what we have called their tertiary meaning, comes to acquire the status of the direct and, so, primary meaning just as the original etymological, literal meaning of a word or phrase may be obscured and superseded by the metaphorical one. Similarly, the secondary meaning of a mathematical sentence may be eclipsed by its tertiary meaning. "2+3=5" states, implicitly, that the symbols concerned are thus manipulated at present in the culture group presupposed by the discussion, and this statement is true if what it asserts is the case. This is not perhaps what we usually mean by the meaning of a mathematical sentence and the truth of a mathematical statement. My use of the words "primary" and "secondary" is a proposal which, if accepted, will help one to solve certain logical problems. The tertiary meaning of a mathematical sentence is often regarded as the primary one. This confusion has led to empirical and psychological accounts of mathematical judgments which treat them as exclusively synthetic. My proposed distinction between the levels of meaning relates the different modes of accounting for and resolving the disputes mentioned here.

(4)(*a*) If a mathematical sentence has a primary meaning only, that is, if it states only a linguistic fact that does not depend on and illustrate any convention about symbols, then what it expresses is a definition or a proposal. It proposes a convention or rule. Thus "$p \times p = p^2$" is a definition of "square" and the sentence is equivalent to "let any quantity multiplied by itself be said to yield its square."

(*b*) If a mathematical sentence like "2+3=6" has a primary and a secondary meaning only—the secondary meaning consisting in the statement of a convention about the manipulation of some symbols, which the statement primarily expressed by the sentence depends on and illustrates, but which, however,

has not been established in our usage because it is inapplicable for world-description, and so has no empirical import—then what it expresses is unfalsifiable and so it is neither true nor false in the ordinary (material) sense. Yet it is a statement, though an analytic one, and not a proposal. It does not itself propose the bare convention but states a logical consequence of the latter being accepted. It describes a certain possible behaviour of man with symbols.

(*c*) A mathematical sentence like "2+3=5" differs from one of the sort described above in that it does, while the other did not, secondarily express a statement describing actual human behaviour with some symbols, and, tertiarily, a statement describing non-human physical behaviour. Therefore, although it may be treated as expressing an analytic statement by overlooking its tertiary meaning, it is more importantly a synthetic statement as the tertiary meaning is more important than the secondary.

(*d*) The question whether "Tully is Cicero" be called a sentence expressing an analytic or synthetic statement or a mere definition (proposal) may be answered in this way. Considering its *primary* meaning only, the sentence expresses a proposal equivalent to "Let us use the names 'Tully' and 'Cicero' interchangeably". In its *secondary* meaning it may be said to express an analytic statement, for it may be said to state the equivalence of these names on the basis of an actual or possible linguistic rule that "Tully" and "Cicero" are to be used indifferently. But so far as the rule may be said to have been stated by the sentence itself, the primary meaning of which does not depend on and illustrate the rule, it is more appropriate to hold that the sentence expresses a proposal than an (analytic) statement such as is expressed by "2+3=5", which does depend on and illustrate a set of number rules. But if the secondary meaning of the sentence is that Tully and Cicero are equivalent as names because people so use them, then it refers to a contingent fact about the human use of names which might be otherwise. As such it is a synthetic statement. Since the names are proper names and refer to an identical and unique object instead of a general characteristic they cannot be said to describe anything in the world. So that there seems to be no tertiary meaning of the sentence. We cannot mean to give by the sentence any

information about the person Cicero or Tully, we can only inform about the use of the same name for the same person. Of course, we may have to mention some characteristics to identify the person referred to by the names but these are unspecified and loosely connected with the names which are not elaborate definite descriptions replaceable by any such set of characteristics. But one may easily overlook this crucial difference and think that a name refers to an object by virtue of a set of characteristics it means, and so may think the sentence "Tully is Cicero" to have a *tertiary* meaning over and above its primary and the secondary ones. We can thus understand and resolve the controversy over this question.

Problem 2. Every empirical statement is falsifiable in principle. But suppose we find a metal not conducting electricity, then is the statement "Metals are good conductors of electricity" falsified ? Surely not, for we will not call that particular non-conducting substance a metal. So the statement is not falsifiable by any observation purporting to falsify it. Yet it is empirical in the sense that it refers to the facts of the world; and this suggests that the relations of facts are not contingent but necessary, and that facts, when truly known, entail one another like elements in a definitional system such as a system of logic or pure mathematics.

Solution : The question whether the non-conducting substance be called a metal or not will be decided by whether the characteristics which are common to this substance and conducting metals are more important than the characteristic in which they differ, namely conductivity. Now this is a decision to be made on the ground of convenience in the systematic description of phenomena in the field of enquiry to which the statement belongs. The scientist may find it advisable to call the substance a metal, though a particular kind of metal defined by its non-conductivity and perhaps by some other peculiar properties to be found later on associated with non-conductivity. So that the original empirical law that all metals are good conductors of electricity would be falsified. Thus it is a methodological question to be decided by the criterion of scientific concept-formation, *viz.*, that the total linguistic system should be the simplest, most systematic and most comprehensive possible. The attempt to save an empirical law from falsification by a

logical device may have disadvantages in scientific concept-formation, the history of which shows many instances of scientific laws being revised. So scientific laws are empirical and the facts they describe are contingent.

Comments :

We may understand and explain this situation in the logic of science in terms of meaning-strata as explained above. A law-statement means *primarily* a linguistic or symbolic fact that depends on and illustrates an actual or possible human conventional behaviour (H) with some symbols to represent some actual or possible physical behaviour (P) in a certain field of investigation; H and P being respectively the *secondary* and the *tertiary* meanings of the statement. Now when a symbolic system or scientific theory becomes well-established, the truth of any particular statement following from that of others deductively, we tend to think of it as a deductive system, so that the tertiary meaning of each statement of the system, that is, the phenomena described by it, tends to be assimilated to a definitional symbolic system, by analogy with the secondary meaning. Since an accepted convention to use certain symbols in a certain manner explains why certain linguistic facts that depend on and illustrate it are necessarily what they are, so one tends to regard the tertiary meaning of a statement as an analogue of the secondary one to explain the constancy of the scientific system. One is reminded of the Aristotelian tradition in logic that supposed everything to have a real definition, fixed and final, the business of science being to reveal these definitions and the deductive system underlying the sensible world. So that the intuition of these definitions or true scientific principles and their deductive consequences must needs be the chief method of science; verification of these consequences by sensible facts and induction from them being of secondary importance, by way of suggesting and confirming the findings of our intuition. One is also reminded of Berkeley who thought the world to be Divine language; clouds meaning rain and fire meaning smoke, and the business of science to discover the grammar of this language. These are all consequences of construing the tertiary meaning-function of a sentence as a secondary one in order to fortify one's faith in certain necessary knowledge.

Truth and Error

THE problem we wish to discuss here is that of perceptual truth and error invading and usurping one another's province. Some argue that since we have erroneous perceptions in plenty, which we take for true ones till they prove false, we can never be sure of the truth of any perception; whatever appears to be true may only appear so and may prove false. Others argue that since we have true perceptions in overwhelming majority and since every perception appears to be self-evidently true till it proves false, if it does at all, we cannot be sure of the error of any perception whatsoever; what appears to be erroneous may only appear so and may prove true. So that while some argue for radical scepticism, others argue for the opposite, and both ascribe to our common sense notions of truth and falsity only a heuristic or practical value. For we have to accept the uncontradictory and coherent perceptions and reject the others for the efficient conduct of life. Thus while some seek to characterise all perceptions as false and others as true, both mean by truth and falsity something different from what we ordinarily do, this language-shift being the natural consequence of their shift in philosophical position. For if every perception be held as true, there cannot be a false one to distinguish truth from falsity, and a similar circumstance appears if every perception be held as false.

Let us now examine one of these radical positions, say, the sceptical one first. According to this, since error is a fact, we may as well treat every perception as erroneous, only undetected so far and so accepted as true. But if we accept error as a fact we must also accept truth as such, for an error cannot be known as one unless we know something as true. When one says one mistook a rope for a snake one must know the rope truly, otherwise there can be no mistake. One may think erroneously, "I am apparently seeing a rope but it may be that I am only imagining it, just as I imagined the snake; I may be mistaking something else for a rope." But then one must also see that as the rope is thus doubted, the unreality of the snake must also be doubted, for it is against the rope as real that the snake becomes unreal. And now one would have to say, "Perhaps I am imagining this rope which might really be the snake I thought I imagine." But

in this state of oscillation one cannot pronounce any judgment at all, and so cannot assert anything about the truth and falsity of any perception. The original perception proving false leads one, through analogy, to doubt the latter perception. But if there is a doubt regarding the falsity of the original perception, there cannot be a legitimate doubt regarding the validity of the later one. More generally we may say that if one doubts one's perceptions of certain objects (*e.g.*, men, ropes, etc.) on the ground that some perceptions regarding these had proved false in the past, this doubt logically involves the possibility of those perceptions, rejected as false, being true. So that though one may psychologically take up the attitude of doubt with respect to every perception, this attitude has no rational backing. If, however, one doubts certain objects of perception (*e.g.*, men) because some other perceptions (*e.g.*, snakes) proved false, one has only a weak analogy and is, moreover, forced to doubt all perceptions, including those which proved certain perceptions false, thereby starting the original doubt. But then the reasoning given above which will dispel this doubt will have to be applied. So that this doubt cannot be rationally justified. The argument that since certain perceptions have proved false therefore every one of them may prove so is, after all, a very weak one. A perception is false only when it is falsified by a true one, and we cannot doubt a perception unless it is so falsified.

If we doubt on principle it is easy to see that we cannot prove anything either as true or as false and that we cannot get beyond doubt. If we doubt the perception of the snake on principle, we cannot prove it to be false, for the rope that is said to cancel it would itself be doubted. The principles of cancellation and non-cancellation, which usually work to decide falsity and truth, respectively, of perceptions, will not help if we are consistent in our use of the principle of doubt. Nor can the principle of coherence help us. For how can we cease to doubt the perceptions that cohere with the given perception and ordinarily tend to validate the latter ? Again, even if we accept these verifying perceptions as true, we cannot go beyond collecting *evidence* for the truth of the given perception to a *verdict* of truth about it. For there will always be the possibility of some conflicting evidence turning up. A perfectly coherent system is only an ideal, and so the coherence test of truth can but streng-

then our faith in some perception. It may help practice but it cannot give knowledge of truth regarding it. To accept degrees of truth, as does the coherence theory, corresponding to degrees of coherence, is to deny the common sense meaning of the concept of truth and to substitute for it the concept of acceptability of belief for practical purposes. For it is not truth that can have degrees but only our knowledge of it. Moreover, why should the laws of co-existence and succession relating the perceptions be used to test the truth of the latter ? Are we more sure of these laws than the perceptions themselves which are in fact the basis of these laws ? Coherence cannot help in deciding truth and falsity if we start with the principle of doubt.

So we see that the principle of universal doubt is neither an epistemological law derived from certain considerations (*viz.*, the fact of error) nor a useful theory. Let us now see briefly how the principle of universal acceptance fares in these respects. As a derived law it cannot be maintained: the truth of some perceptions validating other perceptions is as questionable as that of falsity of some perceptions vitiating others. And as an epistemological theory this principle is as unhelpful and stagnating as its opposite. For it will not allow us to doubt or falsify any perception. The perception of a snake, cancelled by that of a rope and rejected in practice as an illusion, will have to be rationally accepted as true, for if this is regarded as false why not the perception of a rope, for this may also be cancelled in the future by some other perception ? Thus we would have to treat all perceptions, both true and illusory, as true, only that the latter class of perceptions will be rejected in practice because they conflict with the majority of other perceptions which get along well with each other and form a system. But this means that we cannot determine truth and falsity of any perception in the ordinary sense of these terms, just as we are forbidden to do the same if we adopt the principle of doubt as an epistemological theory or procedural policy. So the value of the principle of universal acceptance is no greater than that of the principle of doubt in epistemology.

These two rival principles both commit one fundamental mistake : they reduce both truth and error to something neutral. As shown at the beginning, if every perception is declared true, truth loses its distinctive character or meaning, for there is

nothing to distinguish it from falsity. The consequence of declaring every perception to be false is similar. Thus whichever of the two, truth or falsity, invades the province of the other and ousts it from legitimate sphere, it undergoes a loss of identity. It is a Pyrrhic victory, for there is a neutralisation of one by the other. Thus affirmationism and scepticism, by characterising every perception as true and false respectively have only succeeded in dissolving the common sense distinction between truth and falsity and, with it, the epistemological problem regarding these. They are one in their negative thesis that our common sense notions of truth and falsity hold only for practical purposes and really mean acceptability and non-acceptability for practice. In their positive thesis too they are really indistinguishable, for truth and falsity in their extra-ordinary senses, each applicable exclusively to all ostensible perceptions, are indistinguishable. There is no sense in calling the whole of the perceptual world, including the dreams and illusions, either real or unreal when there is no other world against which the former is either real or unreal.

Truth and falsity must not be allowed to invade one another's province and neutralise themselves. But then what procedure should be adopted when we are faced with the problem of truth and error ? The natural course would be to follow the usual common sense procedure. This is to treat any perception as true yet to reject it as false whenever it is contradicted by another, without bothering over the inconsistency involved in this procedure and without attempting through an analogical argument to reduce truth to falsity or falsity to truth. And perhaps common sense is right in this. False perceptions are really mock perceptions, projections of imagination passing for bona fide perceptions. How can truth be related to falsehood, when the false does not really exist but only appears ? To seek to relate the two is to slur over the fundamental difference between the existent and the non-existent and to treat appearance as truth. This is a repetition on a philosophical level of what happens in everyday practice. So common sense is really right when it keeps the two clearly distinct, though it may appear to be inconsistent in accepting a perception as true and yet rejecting it as false when it is contradicted by another. It requires rather a tough mind to keep up this attitude in philosophy where the temptation to reduce entities to their common denominator is a prevailing force.

Vindication of Solipsism

SOLIPSISM of a naive form, which asserts that everything I perceive is my idea, is indefensible. For independence or objective necessity of perceptual objects is given; objects perceived do not appear like objects imagined; I cannot order them, cannot change a bear confronted in a forest into a deer. To explain this compulsion I may assert that I myself create objects; only I am unaware of this, just as I am unaware in my dream that I am really the maker of the dream objects. This is passing on to a sophisticated and transcendental form of solipsism and this is what I shall seek to vindicate in this paper.[1] Obviously, the self that is said to be creating the dream is different in many respects from the one that finds it real or objective. But the question is : Is the difference so fundamental and unbridgeable in nature that this creator self or God has to be regarded as altogether another self and not as a higher mode of the individual self which may aspire after it and become it ?

The solipsist, on the analogy of our dream-experience, imagines a higher mode of selfhood or spirit to whom the world is like a dream; his own self is a lower or deluded mode of this selfhood and to it the world appears as real. Thus objectivity appearing to the lower self is illusory and contingent, not ultimate. This analogical argument for a higher self, as against an alien God, has this counter-argument. In dreams I have unpleasant experiences because of certain external causes, such as physiological (indigestion, heart-troubles, *etc.*) and psychological (*e.g.*, dread of future danger occasioned by a present objective situation). But what compels my higher self to have the unpleasant dreams that are my waking experiences of life ? In other words, why cannot my higher self have nothing but rosy dreams when there cannot be anything else than itself to force on it bad ones ? The answer to this is that in our dreams and fantasies we do not have unpleasant experiences due to external causes only, but also due to our inherent love of experience for its own sake. Our dreams are our wish-fulfilments too. We love

[1] This is a reply to some of the questions put by Laurence J. Lafleur in his paper, "Solipsism," in *Review of Metaphysics*, June, 1952.

to have all sorts of experiences, to taste all kinds and shades of emotion. Thirst for passions, curiosity after the unknown, and adventure for the strange and the new mark our empirical self. So it is not absurd to conceive the higher self fashioning its dreams, our waking experiences, as a mixture of pleasant and unpleasant elements rich in variety and complexity. And just as my empirical self is said to enjoy (unself-consciously) the experiences of my dreams, so this higher self may be said to enjoy his dreams, my waking experiences.

The next argument against the plausibility of the solipsistic analogy of the dream-experience is that it is difficult to conceive that my higher self may be only inventing objects while they appear to my lower or empirical self to be my discoveries. But it will not appear so difficult if we consider that we have dreams in which we read books, solve problems, explore regions and discover things. And sometimes, when the dream is just breaking off, we catch ourselves inventing our dream materials such as reading matter and the solution of a problem. The unself-conscious empirical self in fabricating a dream-world uses great ingenuity; it may present to the dream-self a complete drama in all its complex pattern with its moments of suspense and surprise in perfect order. So it is not difficult to conceive a higher unself-conscious self fabricating this world of waking experience from behind.

Another implication in this analogy is this. The laws of nature must have been created by me (higher self) and since forgotten, so that my lower self gradually discovers them. But the laws must be held to exist all the while to explain their continued operation in spite of my forgetfulness. Where do they exist ? It must be in some mind, and if this be my mind it must be unself-conscious. So that I have to conceive, on the analogy of my empirical unself-conscious self, a transcendental unself-conscious self that is also immanent, inasmuch as it must be recognisable as mind, being operative from behind and yet capable of being laid bare. Now this is not very difficult to imagine; just as the breaking of a dream reveals the empirical unself-conscious self, inferred from continuity of memory, so may the breaking of the waking experience be imagined and its revelation of the transcendental unself-conscious self. But the question that arises here to baffle us is : When did this dream, that is,

the waking experience, start, and why did the transcendental self fall into dreaming, forgetting its original state ? We can clear this difficulty if we consider that temporality is a creation of the transcendental self, which, therefore, must itself be in an eternal now and that what appears to the empirical self as succession is simultaneity for the transcendental one. Thus the creation of this individual self and the world of waking experience has no absolute beginning; speaking in terms of our temporality, it is beginningless. That I forget my past lives and their experiences is conceivable in the light of the dream-analogy; the dreaming self does not remember within the dream its past dreams and cannot find an absolute beginning of his dream state. As to why the transcendental self, forgetting its original mode of being, fell into dreaming, our answer is again that it is for the same reason that leads us to our dreams and fantasies, namely, love of experience.

Another difficulty to be overcome in the solipsistic conception is that we have to imagine that the one transcendental self is aware of the experiences of each individual self as a dream. That I have direct access to my own experiences only is the self-created limitation of the transcendental self that is unself-consciously enjoying the infinite variety of experiences through individual selves that are its modes. Here the dream-analogy partly breaks down; yet we can conceive of such a state with the help of imagination and sympathy which enable us, in our empirical mode of being, to share the experiences of others.

The dream is known as such only when it breaks and we are then aware of the empirical unself-conscious self as the producer of the dream-world. So when we speak of verifying our solipsistic thesis we have to think of some direct experience on our part of the world of waking experience appearing as a dream. Now, if we disregard the confessions of the mystics and consider only our general and normal experience, even then we find that we have certain experiences which are partial realisations of the world as a dream and which like arcs point to their complete circle. Do we not have moments in our waking experience when the world with its elements of pleasure and pain and all its rich complexity appears as an art object, not obtrusively necessary but free and fluid, not affecting us really so much by its good and bad, beauty and ugliness, truth

and falsehood (in their ordinary empirical senses) as essentially delighting us ? And are not the moments of this aesthetic attitude really lucid ones in our life, when, as it were, we see through the world and life and find them as objects more to amuse ourselves with than to be seriously bothered about ? Is not sense of humour a more profound philosophical attitude than matter-of-factness ? Or is this aesthetic detachment ethically wrong, a sort of irresponsible light-heartedness ? No. For does not the good man in his moments of true goodness transcend his ordinary empirical sense of good and bad and act out of perfect poise of the mind born of disinterestedness ? Does he not love his enemies and all the sinners of the world and live amongst them and suffer with them ? Aesthetic detachment and ethical disinterestedness are not essentially different; they are moments in the realisation of the world as a dream.

Again, the idea of some absolute truth that leads man to get beyond the sphere of the relative and the probable, that is, the empirical reality, reveals the absolute. This absolute may be conceived to be the transcendental self that projects a world of dream and takes it for reality in a self-deluded state. The urge in us (in our empirical mode) for absolute beauty, goodness and truth is an indication of the possibility of the realisation of the empirical world as a dream. The self in its fallen or deluded state may be said to retain some faint idea of its original freedom and of its creating the world out of imagination for the sake of pure sport or artistic delight. So it seeks to realise these faint ideas felt as vague intuitions. But as it does not quite know how or where to achieve these completely, it moves haphazardly, seeking these values in the world and life, failing and learning from experience, and so progressively becoming aware of the relativity of the empirical reality and the possible existence of some absolute reality. Any philosophy that does not take full account of this value-urge in man falls into serious difficulties through limiting data or narrowing the universe of discourse. Reality can be found comprehensible only when it is taken in its entirety without any bias affecting our collection of data. We must not leave out any clue in our investigation of reality.

From the above we can see that the dream-like state of empirical reality or waking experience is a partly verified hypo-

thesis; and so too must be the transcendental self and its unself-conscious part, for these are the implications of this state of affairs. We have to verify the transcendental thesis through a kind of extrapolation from our experience in our aesthetic, ethical and meditative moods, when we partly rise above our empirical mode of being and realise the transcendental self. And we can partly verify certain associated characters or states of affair which are evidences for solipsism. Thus most of us with little practice can learn to read the thoughts of others, hypnotize them, and have visions of their past and future. These show that the partition wall between two empirical selves is not absolute and that all that appears as successive is fundamentally in an eternal now. All these and some other phenomena of para-psychology go to show that the thesis of transcendental solipsism is not only meaningful or plausible but may also be verifiable or true.

What is Philosophy?

THE question, "what is philosophy?" itself poses a major philosophical problem and like all such problems remains unsolved to this day. There are various concepts of philosophy and it is impossible to comprehend them by means of a broad formula, for some of them are mutually incompatible and even if we arbitrarily pick out the mutually compatible ones and put them under a single concept the latter will be so general that it will hardly serve to distinguish philosophy from other studies. It would be a vacuous concept of philosophy but if we seek to specify it a little we cannot avoid arbitrariness in our procedure. So that any effective definition of philosophy requires the definer to use his free judgement or preference and the definition tells people what he likes philosophy to be, not what it is like. Defining, then, becomes prescriptive rather than descriptive in nature and function. This raises the whole problem of definition. I can define chair so as to exclude any existing chair from being called a "chair" in my sense and yet claim it to be a true definition in the sense of a good or right one and may find many persons to agree with me. So that I can revise the existing concept of a chair. To object to this procedure by saying that I am not telling what a chair is but what I like it to be will not go very far. For I can make the counter-objection that my opponent assumes that there is such a thing as a fixed and finished concept of a chair; he cannot produce one and by assuming that there is one he excludes the possibility of a new kind of chair. He commits the naturalistic fallacy in the sense that what a chair so far has been like must also be so in future. I claim chair to be an open concept and not a closed one. One may now object to my calling of this revised concept of chair "chair" for it is quite another thing. But I can reply that there is a general family resemblance amongst the different concepts named "chair" and it will complicate and confound matters if we give different names to these different concepts. No generalisation and no knowledge and no communication would be possible in that case. There is no other way out of this puzzle than to choose or make one's own concept and recommend it to others.

Philosophy, therefore, can be defined not in the sense of determining its real nature or true differentia but in that of deciding upon a view of philosophy which satisfies the definer and of proposing this view to others. This decision will be proximately governed by one's total view of the world and life of which philosophy is a part, but ultimately by his very deep-seated temperamental and cultural preferences which underlie and determine this total view. These preferences, whether inherited from one's own tradition or acquired from some other tradition or developed independently from one's experiences and reflections, are so strongly embedded in one's character that it is hard for one even to explicate them, not to speak of regarding them critically by reason. They are at the bottom of one's reasoning and so can be neither justified nor censored by one's reason. To define philosophy is thus to express in an indirect and fragmentary manner one's own philosophy or world-view and to reveal one's intellectual personality. As such it is not to make a statement of fact that is either true or false but to offer a proposal that is either satisfactory or not to others. Others cannot judge it in the sense of verification or falsification, they can but express their own views which may agree with it or not and which have the same status as it has. We cannot get round this pluralism and subjectivism.

We will now glance through some of the more important definitions of philosophy and comment on them from our own view-point which will be explicated by and by. Definitions like "love of wisdom" or "taking a detached long-ranged view of problems of the world and life" or "study or examination of life as a whole" are so broad as to hardly exclude any of the possible conceptions of philosophy and, so, be rejected by anybody, but it is more or less vacuous. It does not help us to distinguish philosophy from any aphorism or lyrical outburst on anything. Addition of further differentia like a 'systematic study or rational examination of life' specifies the concept and makes it more applicative but it makes it controversial too. The existentialist philosophers will not admit this concept; for them philosophy is to reveal by a set of sudden insights the meaning of life and the significance of some of our basic beliefs and feelings. There is no systematic truth to be found in our experience. Philosophy makes us aware of human situation with its irrationality, dread,

boredom and freedom to choose any world-view. For the Vedanta philosopher philosophy is to show us the illusoriness of the world and life and the falsifying activity of the intellect which really projects this world and confers some system and meaning on it. This philosophy is anti-intellectual and must issue from one's supra-intellectual faculty. There are other anti-intellectual philosophers who define philosophy in terms of some intuition which is said to offer a direct acquaintance with world principles they severally believe to be there. Thus Bergson speaks of an intuition that reveals time as this world-principle while Whitehead speaks of one that reveals the world as an organism with its parts 'feeling' for each other. They cannot accept philosophy as a rational system-building, a kind of synoptic science or inductive metaphysics that pieces together the results of science and rounds them up in a total world-picture. One reason which they offer in support of this is that philosophy must give us necessary knowledge, not clever guesses or hypotheses. Reason can only connect parts of our given sensible and reach some general and hypothetical notions of the principles or substances behind the experiences in order to explain the latter. It can never tell us what there must be or really is, only what there may possibly be. So that an intellectual system of philosophy cannot lead us beyond provisionality. Since the data of experience is a vast and open system an intellectual philosopher who raises his philosophy on them cannot avoid thinking that the basic concepts that he has found so far to be adequate may have to be abandoned later on in the light of new data. Moreover he finds alternative conceptual frameworks such that it is impossible to judge on a purely rational basis which is the more fruitful. An element of choice governs his system along with the given data of experience. Again there is the question of relevancy or context in this work of systematising facts. One may find some data not relevant in connection with a certain concept that works in a certain area of experience while another may disagree with him and, so, propose a different concept. Thus opinions may differ on the range of applicability of a concept which, thus, cannot be objective and compulsive but more or less subjective and constructed.

Thus we see that the rational system of knowledge said to be offered by an intellectually oriented philosophy is neither rational

nor knowledge in the senses these terms are ordinarily used and if philosophy is to give us certain knowledge and not clever guesses we cannot favour this sort of philosophy. But whether philosophy must give us certain and complete knowledge has to be decided.

This only brings out the situation that the concept of philosophy, if it is to be a bit specific and not left vacuously inclusive, is determined by one's own philosophy. One's justification for one's particular concept of philosophy is offered in terms of one's whole philosophical outlook which both supports and is supported by this concept. We may complain that one prejudges the whole issue thereby or begs the question but there is no other way. How can one have an answer to what philosophy is without subscribing to a particular philosophy which must suggest and illustrate his own notion of philosophy and of which this notion forms an organic part and as such both the two are mutually supporting. Philosophy as a human activity and achievement has to be explained in one's total philosophy which, again, has to conform to the former view of philosophy.

Now since there can be various systems of philosophy depending on the various choices made by philosophers, we shall have various notions of philosophy. We cannot escape relativism and plurality in this matter. But each mind can decide upon a particular cluster or family of ideas and, so, build its own world-view and take it for its own working philosophy to rest on and act upon with as much sincerity and consistency as may be possible for it. Without being dogmatic one can believe in a certain set of ideas about our world and life and without being stagnant in mind one can still achieve a certain amount of intellectual satisfaction and rest. Thus one will maintain a dynamic balance between the centripetal pull for a complete rest in some fixed dogma and a centrifugal urge for an absolute openness and wonder.

We have thus implicitly and partially defined our own concept of philosophy. It is to develop a consistent picture of of the world and our life in it by reflecting upon our experience. In this process of reflection we cannot claim to have any special or extraordinary faculty of the mind but employ more or less the scientific method in this that we use generalisation, hypotheses and deductive verification and also analogy.

We believe as against the modern linguistic philosophers, that there are some striking resemblances or family relations and ordered occurences in our experiences which make reflection possible and that though a large factor of subjective preference enters into this procedure of explication of what are usually taken to be the objective and immutable principles of experience yet this cannot be enough of a reason to escape the demand of our mind for knowledge or systematic account of our experience and to deny the presence therein of a significant amount of intelligible order. Our experience seems to hold in equilibrium the two opposed principles, method and madness, so that it seems advisable to keep to the middle path between one extreme of relativism, scepticism and irrationalism and another of absolutism, dogmatism and rationalism.

This view of philosophy as attempting to build up a vision of the world by reflecting on experience and accepting the subjective colouring it cannot escape, is not empirical and so far as it does not restrict its data to sense-experience only but recognises some moral, religious and aesthetic experiences and beliefs as well which we feel we cannot think away or take liberty with. These are *a priori* or categorical in the sense of being hard data above critical enquiry or revision and are held as valid irrespective of whether they prove useful in life or not or accepted by others or not. The commitment to such principles or values again shows a subjective element in our philosophy. What we hold as *a priori* valid may be considered by others as simple prejudice born of accident or blind custom and tradition or accident. Philosophy, thus, as we see it, cannot be free of personal and culturalist bias. It is like one's dress or poetry that cannot fail of expressing one's personality. To seek pure objectivity in philosophy is as misdirected as to seek a picture of a house corrected of every particular perspective.

Again, our concept of philosophy is not rationalistic in the traditional sense in so far as rationalism asserts the existence of certain objective principles in nature given to our direct knowledge. We take an empirical view of the principles which are really postulates that help us to understand and explain our sensible data and as such they are contingent and open to revision. Thus the laws of science and what are known as categories or first principles of scientific knowledge such as speciality, tem-

porality, substantivity, attributiveness, and causality are all postulational and tentative, the laws being postulated to explain the regularity of some observable phenomena while the first principles are but methodological rules justified by their fruitfulness in systematising our sensible data. The feelings that the first principles might be categorical, *i.e.*, *a priori* valid independently of their application in science, arises from their very effective application in large areas of experience and our familiarity with them. We admit the categorical nature of some valuational principles only which rule our will and conduct but we deny the principles of external nature or our natural knowledge this status. We, however, admit at the same time the arbitrary and tentative character of our or any philosophy. It is so because, first, it rests partly on the data of sense-experience and value of experiences (moral, aesthetic and religious) which cannot be said to be the same in all persons, nor to remain the same for any particular person, and secondly, one may arrive at simpler and more comprehensive postulates to systematise the data, and this work of systematisation is never completed, the house of philosophy is ever under construction.

There is a conception of philosophy as reflecting upon the conceptual frameworks used in various sciences and suggesting revisions in them and also unifying them under more comprehensive formulas that will deal with the whole of our sensible experiences. Philosophy is to issue directives to all the sciences and also attempt to build up a unified science. We do not approve of this idea of philosophy for, first, this work can be more competently done by the scientists themselves—it is more immediately a scientific ideal than a philosophical one—and secondly, it confines philosophy to the task of integrating our sensible experience leaving out the world of values and supernatural beliefs embedded in our moral, aesthetic and religious experiences. Philosophy, we believe, does not compete with science, though it seeks to integrate experience and does supplement the scientific integration of sensible experience by postulating some more inclusive concepts; it goes far beyond science to enquire into the transcendent cause or ground of these experiences and the principles that rule them and into our knowledge itself and it includes our inalienable experiences of and commitments to values and supernatural beliefs within its range of data. Thus

philosophy seeks a complete explanation and unification of our experience in its broad sense and, so, a full satisfaction of our intellect. Of course it does not mean to offer us a detailed information about the world that the sciences seek, it attempts to grasp the total scheme or outline of this vast cosmos with our life in it and that life involves our dreams and desires, knowledge, beliefs and aspirations. Philosophy searches after a synoptic vision, not a specific account, of our experience. It delves into the obvious experience to expose the entities and principles that operate from underneath. Thus, though philosophy adopts the method of science, its scope is larger in dimension than science.

It is not, however, right to say that philosophy completes science for it is not that science aims at but cannot reach what philosophy can. Science aims at much less than philosophy. Philosophy is ambitious without scruples and limits and since it is not easily understood how can it ever perform the enormous task it addresses itself, it appears to many as vain and pretentious. Some philosophers claimed a special faculty which made it possible for them to do what the scientific intellect cannot. Even Kant, who believed that we do not have any extraordinary faculty to go beyond the sensible world and forbade metaphysics, thought one could by a kind of reflection, not only pick out the first principles of science, the categories of all sensible experience, but also know them to be *a priori* valid. They dictate our synthesis of the sense-experience not that they are arrived at from experience, nor that they are validated by their success in their job of synthesising experience. We, however, as we stated before, believe with the modern scientific methodologists that these principles are procedural rules and as such only methodologically *a priori*, not *a priori* valid, and that they depend for their being considered as true and retained in scientific practice on their continued success in their job as conceptual tools for the integration of experience. Now since we do not ascribe special faculty to the philosopher, we have to be modest in our claims regarding actual performance of philosophy. We hold that philosophy can but speculatively and tentatively speak of its final results. It reaches its goal of total synthesis and explanation only by bold hypotheses provided by quick and enterprising imagination and by arbitrary choice of conceptual frame-

works at every bend of its deliberations. The total picture it draws of our experience must necessarily be sketchy with faint and even broken lines at places, and with a note underneath "Subject to revision without notice."

Besides the popular notion that philosophy is a kind of super-science there is another that it is super-ethics, giving guidance to the moralist. It helps one to examine and re-assess the correct values of life. It is in this sense more or less that Socrates took philosophy and declared, "an unexamined life is not worth living." We believe this revaluation of values to be one of the consequences of philosophy and not its direct aim or purpose. Moreover, as we said before, a philosopher can hardly question some of his valuations which are for him *a priori* valid and basic in his philosophical theory. He cannot re-assess them but counts them as data of his experience. The Socratic faith that one can objectify and critically consider everything one believes and acts upon is rather unrealistic and it reveals his extreme intellectualism. That philosophy is not wholly an exercise of the pure intellect but is partly an expression of our basic inalienable personality is what we have to acknowledge. Though a philosopher may come to question and revise many values he previously held if he finds them conflicting with a body of more closely held beliefs, yet this only shows that at some particular time a philosopher must hold fast to certain beliefs which he considers for the time being unquestionable and which expresses his personal character or intellectual disposition for the moment. Without such a foothold in a set of incorrigible principles, a philosopher loses all conviction and character. Too much intellectualism and liberalism is as ruinous for philosophy as too much faith and orthodoxy.

The modern linguistic philosophers hold philosophical problems to arise out of our improper understanding of language particularly its nuances and polymorphic structure. So that these problems are not genuine. The philosopher, for instance, will ask in what form Nothing or Pegasus can exist when we state truly that nothing exists or Pegasus is fictitious, for something must correspond to the subject of these judgments in order for them to be true. The way out of such confusions is to find out the true logical form of the sentences, that give rise to such philosophical puzzles, underneath their grammatical forms.

One can then see that 'Nothing' and 'Pegasus' are no proper names to have their referents, they are general names or incomplete symbols that do not mean anything by themselves, but have meaning only in the context of a whole sentence. Moreover, the terms 'Existence' and 'fictitious' are not proper predicates, they are not attributes to any substantive; we cannot treat a sentence like 'This pen has existence' or "Pegasus has no existence" after "This pen has a red colour" or "That tea has no flavour." For one thing, we can say, "Red colour or flavour exists" but not "Existence exists". Now the linguistic philosopher believes that true philosophy exposes the confusions that give rise to the puzzles of traditional philosophy and, so acts as a deterrent and cure of the latter. Its business is linguistic analysis and, so, clarification of meaning, and as a result, to leave the commonsensical world just as it is. It will help people to see that everything is in order, and, so, to relieve them of the perplexities that traditional philosophers cause in their minds. Now we, for our part, while granting that some problems have a linguistic origin do not believe that all problems are of this kind. Moreover, even if it be true that the philosophical problems arise out of violating the logical grammar of a language and, so, lose meaning in that language, it is false to hold that the language we currently use is a fixed and finished tool that serves us perfectly in describing and communicating our experience and that we need not and cannot change it. We can and do always reconstruct language, our conceptual map is never complete; it is always in the making as our experience is too large, complex and fluctuating for our clear comprehension. The linguistic philosopher seeks to close down this research and reconstruction and commits the naturalistic fallacy that what form language has attained at present is final and what it ought to have. Philosophy is a constant effort to complete the intellectual picture of our experience and, therefore, to find the true language which will faithfully reflect this picture. Naturally it will always speak what appears unspeakable. Its meaning will not be clear in the language it is trying to reconstruct but one can guess the insinuations of its utterances. Our love of clarity must not outweigh our love of wisdom.

The positivists conceive philosophy more or less in the manner of the linguistic philosopher. They stress the language

of science while the latter the ordinary language. The positivists want the philosopher to engage himself in bringing out by analysis the true meaning of a sentence that purports to ask or answer a philosophical question of the traditional sort. They believe that this analysis will result in a sentence which will be either analytical, *i.e.*, tautologous and so trivial, or synthetical, *i.e.*, empirically significant and, so, to belong to science. Thus they divide up all the possible indicative sentences into two categories and leave none for philosophy. Traditional philosophy, they think, either indulges in tautologies supposing that it is engaged in significant discourse, or it deliberates on factual matters in an uncalled for and incompetent manner which should be left to the scientists. Or, again, it speaks meaninglessly about things, supposed to be known by some extraordinary faculty, which have no verifiable consequences in the world and, hence, which do not make any observable difference in it. Thus, 'God exists' is a tautology if by God is meant a perfect Being and by perfection is meant all the excellent characters including existence. If, however, the statement is not thus shown to be logically and necessarily true by a question-begging procedure but as contingently or empirically true by virtue of God being something that as a matter of fact exists, then God is either observable or unobservable. If the former, the statement is empirical and belongs to science and scientists should be consulted about the matter. If God be an unobservable entity, even then the scientist is competent to say whether this may be said to exist or not like an atom or electron on the evidence of its verifiable consequences. Now, no such evidence is spoken of in traditional philosophy where since everything we observe in the world is said to be caused by God's will there is left nothing that would serve to demarcate God from other things and to prove Him as a specific object. The assertion about God's existence, if claimed to be indirectly verified by observable objects in the manner of scientific objects like electrons or waves, becomes vacuous because everything verifies it and nothing can possibly falsify it. So that God cannot be offered as a scientific hypothesis. If, however, God is claimed to be an object, directly known by some extraordinary faculty, the positivist will reject such a claim for he, along with an overwhelming majority of

people, does not possess this faculty and cannot make any sense of what it is to know God by its means.

Now we for our part consider this positivist criticism of traditional philosophy to be a little misdirected. A metaphysical entity like God, world (as a totality of things) or soul, is not to be conceived after a scientific object and the talk of its existence is also of a different kind. We think of everything or totality of things, the world in an extrapolative manner such that though we can never observe it we can think of it in an analogical manner. In fact we cannot help thinking in this manner, we cannot stop short of a total integration in imagination of our experience. We come to think and speak of the infinite in this way. It is arbitrary to stipulate a theory of meaning that rules out such terms from our language as meaningless; this will cramp not only our philosophical discourse and enquiry but also scientific ones. Now having the idea of the world we think of it after a finite thing and analogically think of its productive cause. Since no ordinary cause can produce it we think of a transcendental cause and since the latter is no ordinary thing it may not itself be caused. God is imagined after one's own self causing imaginary things, this self being first felt as a subject willing and thinking, and, then, objectified into a soul-substance after the analogy of other things. God is then imagined to be the cause not only of the world of things but also of the soul. This creator God takes the world and individual souls to be but as unsubstantial as we consider our figments of imagination. However, God is also imagined after our making things and hence as a maker only and not a creator, the matter of the world being given to Him. In this concept of God the ultimate reality of the world is saved at the cost of God's absolute reality and power. Anyway, what we wish to convey by this rather rough genetic analysis of the metaphysical concept of God is that such concepts are not without meaning though they have no verifiable consequences of the sort that are associated with a scientific entity. Here the meaning is projected by the analogical or figurative thinking and in so far as this kind of thinking is very natural to man such a projected meaning and the corresponding entity may be called real in some sense. The positivist takes metaphysical statements literally and, so makes a travesty of them. The kind of meaning he searches after in metaphysics

was never put there. No serious philosopher ever spoke of God's existence and causation in the ordinary sense.

Of course, whether the metaphysical statements are acceptable or not is a separate question. We believe that there is much scope for metaphysicians to differ amongst themselves and this is seen from the history of this discipline. But, as we stated before, pure reason cannot settle the issues, there will be alternative answers from which one has to be chosen by serious metaphysician who has to form his own world-picture for his intellectual satisfaction which cannot rest content with a multiplicity of alternative hypotheses. In this situation he has to decide upon one line of thinking rejecting the others and here his personal preferences, his culturalistic traits will come into operation. Philosophy is to a large extent a free venture and construction and not a passive recording of things given from outside. It is an expression of our personality subject only to the conditions of unity and intelligibility in their broadest senses. Being fully aware of this element of personal preference and creativity in philosophising philosophy offers itself to others as a helpful suggestion or friendly persuasion, hoping that people of certain bent of mind or outlook may find it profitable in their own job of coming to some terms with their experience. Philosophy must claim neither more nor less.

Knowledge and Truth: A Phenomenological Inquiry

WHEN a subject S has a knowledge K_1 giving an object O_1, this K_1 may be doubted and its verification demanded. But how can this verification leading either to confirmation or disconfirmation of K_1 be possible ? In other words, how can the truth or falsity of K_1, and so of O_1, be known ?

Truth and error in K_1 implies the existence of a true O which may be identical with O_1 if K_1 giving O_1 is true and different from O_1 if K_1 is false. In the latter case it may be identical with O_2 given by K_2 which may then be true. Thus O_1, O_2 etc. are different objects of different instances of knowledge K_1, K_2 etc. all claiming to be some one absolute O, and since some fail to justify this claim, doubt is cast on all of them which are treated as mere representations of O and not O itself. Belief in knowledge being true or false, that is, doubt and demand for confirmation, implies this situation. But how to know O, and, so, know any instance of K_1, K_2 etc. to be true or false, if all that we ever have are the representations O_1, O_2 etc.? So that either our doubt implying our belief in truth and falsity of knowledge is a superstition or O is knowable by some higher order knowledge than K_1. Now doubt or our idea of knowledge being true or false (and not undoubtable or self-evidential) is based on facts. Our knowledge proves erroneous in practice. Illusions are common in perceptual knowledge, we mistake a rope for a snake. The so-called laws of science are contingent and not necessary, every law being established on perceptual knowledge and the principle of induction both of which are questionable. So that our doubt regarding knowledge and our demand for its verification is not to be rejected, rather the belief that the truth or falsity of a piece of knowledge belongs to the same order of knowledge as contains the knowledge to be verified is to be abandoned. In other words, a piece of knowledge to be verified requires, not other pieces of knowledge of the same order, but knowledge of a higher order. If we strictly confine ourselves to a certain order of knowledge then any knowledge of this order is *known* to be neither true nor false but merely *taken* to be true.

Knowledge then would *imply* a faith in its truth which is no additional quality of knowledge, and error then would be a puzzle and false knowledge a contradiction in terms.

But now arises one question. If our doubt be based on actual facts of truth and error and so must be accepted rather than the other alternative, *viz.*, that truth and falsity belong to the same order of knowledge as contains the knowledge to be verified, then these actual facts of truth and error must on analysis reveal two orders of knowledge involved in them. Doubt implies that we have knowledge of truth and falsity, and, as we are not, while doubting, conscious of our passing from one order of knowledge to another, this passage must be implicit needing explication through philosophical introspection.

When subject S has knowledge K_1 of an object O_1, how can it know whether O_1 is the true O when it is obvious that knowledge K_2, K_3 etc. of the same order as K_1 are equally reliable or unreliable ? Let K_1 K_2 K_3 etc. belong to the perceptional order of knowledge. Then if K gives a snake, K_2 a rope, K_3 a stick, K_4 a black charcoal mark, K_5 a snake again, K_6 a rope again, and so on for a long time, and if the mind is strictly confined to the perceptual level and never allowed to think or infer anything for a moment, then there will be no knowing which one of the several objects of knowledge is the true one and which false. But such a situation rarely lasts for long, for the mind thinks out which one of the objects fit in with other objects of perception, some pertaining to the environment while others to the antecedents and consequents of the objects itself. Thus, if I see a snake in my study on the second floor of the house in Calcutta and if in addition the object does not move even on my making noise and hitting it with my dictionary, I come to reject the snake-knowledge as false. On the other hand if perception of other objects and relating them with the object (to be verified) through causal laws give coherent results the object is to be known as true. The knowledge that this object and so the perceptual knowledge, is true is of a higher order,—inferential in this case,—than the perceptual knowledge istself.

But this leads to many questions. First, why does perception at all give several objects besides the true one and not the latter only ? If it was the stick which was actually there why should one have so many erroneous objects ? The answer is

well-known. The perceptual object, stick, is always an unconscious construction out of sense-data associated with it, and these being sometimes not sufficient in number (for lack of adequate light or eye-sight or attention) for uniquely determining the stick, lead to the constructions of other objects also which are associated with similar sense data (as there are in a particular case of insufficiency) besides others which differentiate them from the stick and each other but which are absent on the occasion of insufficient light, eye-sight etc. The different objects made out of the insufficient sense-data are equally likely constructs as all have those sense-data in common. But generally one of these constructs is retained and others rejected and what determines this unconscious choice (on the perceptual level) is some wish, expectation or apprehension of the object (chosen) in the mind which through auto-suggestion leads to the belief in it and also to the projection of some characters of the chosen object on the field. Thus we seem actually to sense a snake when there is but a rope. Pure hallucination shows how what we think or imagine can be projected outside and hallucination plays a well-known role in illusory perception.

Now the *second* question is : why cannot the mind *perceptually know* one of these constructs to be true ? The answer is that the mind knows by experience that the percept *taken* to be true changes due to changing conditions, both internal and external, of perception and the mind implicitly knows by higher order relational knowledge that a true percept or object cannot in reality change so queerly as percepts do, *e.g.*, a snake into a stick, a post into a man. In reality changes are usually continuous and always according to some law, *e.g.*, ice changes into water, buds into flowers, diamond into carbon (when burnt). Thus the mind is not confined to the perceptual plane only but has an implicit idea of inferential or relational knowledge which tells it that percepts change queerly and as such no percept by itself is true though it is *taken* to be true when the mind is working only on the perceptual plane and does not doubt anything nor demand verification of it. So that the mind in the perceptual plane, *i.e.*, the subject S, does not know any percept to be true though it may really be true nor does it know it to be false if it is really false. To know something to be erroneous one has to know what is true. S takes every percept to be implicitly true.

But the mind is seldom on the perceptual plane for long. It rises to the inferential one and this higher order subject, S' doubts the percepts and seeks verification of them through higher order knowledge K'_1, K'_2 etc.

The *third* and the most important question is this. If inference on the basis of further perceptions and inter-relations between them and the given percept gives us truth or falsity of this percept, then can this truth or falsity be ultimate and unquestionable ? The basis of inference is not known to be true. The new perceptions are as open to doubt as the given one, and the relations between perceptual objects are also not above question for there is no guarantee that what held in previous cases will also hold in future cases. (The principle of induction is not a logical one to be self-evidentially true. It is a factual proposition and as such cannot be self-evidentially true. It is an *operational a priori*, that is, a principle provisionally taken to be true in science to enable systematic organization of sensuous data). The answer to this doubt cast on inferential knowledge is that it is a valid doubt. It is true that truth or falsity of perceptual knowledge arrived at through inferential knowledge is not ultimate but relative only, having a practical value so far as the criterion works. The criterion is coherence and it assumes the systematic relatableness of the worldly phenomena as a working hypothesis in deciding questions of truth and falsity of knowledge. Besides making a questionable assumption it is not very practicable also. For in deciding any case of truth or falsity of a piece of knowledge completely it lands us in an infinite regress, and to decide a difficult case (which questions many established laws) becomes almost an impossibility, for unless we know the whole truth we cannot decide a part. This whole truth, the world as a system, being after all a projection of our subjective demand for perfect and total order and intelligibility, cannot be known. The very notion of 'world' or totality of things does tease us out of thought as do eternity and infinity.

But if a piece of relational knowledge is not known to be true but only taken to be so on the relational (or inferential) plane of knowledge, is there not another higher order knowledge, constituted of K''_1, K''_2, K''_3 etc. to justify our quest for truth of this relational knowledge just as a similar quest for truth of any perceptual knowledge justified the existence in our mind of

relational order of knowledge ? And just as S contained in it as an implicit mode or grade S′, so cannot S′ contain in it in a similar fashion another higher mode S″ ? Orders of knowledge must correspond to orders of subjectivity, and since the demand for knowledge of truth and falsity of a piece of knowledge in one level implies the potential or unconscious knowledge of a higher order, this also shows the implicit working of a higher order subjectivity in the lower order that demands this truth or falsity to be known. Thus genuine doubt implying this demand for verification of knowledge of a certain order implies also the simultaneous existence of a higher order mind in the doubter and a higher order knowledge behind the knowledge doubted.

So if one has genuine doubts regarding the truth of our relational knowledge and if one seeks to pursue this doubt to its origin and settle accounts with it, one has to be explicit about the higher order knowledge that this doubt implies. This doubt is occasioned on the perceptual plane by changing of objects rather drastically and arbitrarily which the mind having an implicit higher order knowledge of order and continuity of the world takes amiss and wakes to explicit or conscious knowledge of this higher order. In the case of relational knowledge, ordinarily the mind does not experience anything to shock it out of its implicit faith in relations or systematic law-abidingness of the world. But the mind in a philosophical mood (including the moral and the aesthetic moods) feels these relations or laws to be but somehow mind-made and provisional when it comes across such experiences as the following : actual miracles and the emptiness of the concept of necessity in the external world (necessity implying alternatives and a conscious agent who has no choice but must take up one course marked for him), actual freedom and disinterestedness in the moral and aesthetic moods which dimly shows the world to be a playground of passions and sensations meant for our sportive delight, where the laws are like rules of a game necessary only for the play's sake and perfectly flexible having no other use or meaning. But this mind that apprehends this subjectivity and contingency of laws is certainly a higher mode of mind than the ordinary one that takes the empirical world and its laws to be absolute. This is the third grade of mind or subjectivity, S″, which is contained implicitly in the second and comes to be explicit when the doubt regarding

the validity of the empirical world is explicated by a philosophical inquiry.

When we have gone thus far cannot we go one step further to see what happens when S″ has doubt regarding K″? This would imply the implicit working of S‴ and K‴ which would become explicit through philosophical meditation. This would mean that the subject will now find that the world as an illusory or make-believe affair is itself an illusion and so negated. This negation of a negation does not amount to an affirmation of the original object negated, the world. For the two negations do not occur on the same plane of knowledge. The two negations lead to the negation of all objectivity, real and illusory, with the result that the negating subject S‴ is not aware of itself as a subject any more but as a pure awareness. Th isis the end term of the series of subjectivity and knowledge. This is the absolute truth as it has nothing besides itself to doubt or question and doubting awareness itself is a self-contradiction. The hierarchy of truths, arising from the fact that the truth of one knowledge belongs to a higher order knowledge, does not land us in an infinite regress as do other philosophical theories, *e.g.*, the theory of an infinite self-representative series of some idealists (*e.g.*, Royce), the theory of meta-languages in logical positivism and linguistic philosophy, and the theory of multi-ordinality in the non-Aristotelian logic. We have avoided this infinite regress by steering clear of empty formalism or logicism and by keeping close to our experience. We have sought to trace our experience in cognitive enterprise back to its hidden sources which are lighted up or explicated by our epistemological introspection. Of course, the last step in our present research is not very self-evidential to us but taken over from the experience of others, particularly the Vedanta mystics. This is the most important step in one way leading us, as shown above, to a last term in the series and an all comprehending resting point in the philosophy. We may call this particular philosophy Vedanta phenomenology, and then we can see that S‴ is the Self or Brahman and S″ is roughly *Iswara* or God and S-S′ the empirical self or *Jiva*. The Self implicit in us prompts us to doubt and cancel all knowledge that falls short of this Self-knowledge until we reach by successive negation (*neti, neti*, as says the Upanishad meaning 'not this, not that') the explicit realization of the Self

itself. This happens because the Self is the absolute truth and our empirical self having implicit possession of it cannot rest satisfied with anything less than this absolute.

The metaphysical question why the Self or the Absolute obscured itself through its modifications falls outside our present inquiry which is epistemological. Yet a fact observed in epistemological introspection may suggest an answer to the metaphysical question. We can very well notice a peculiar delight associated with resolving of doubt and knowledge of truth at each passage from a lower order knowledge to a higher one. There is a self-transcendence and self-knowledge at each step in the ascent of the lower self to the highest Self. Is it not for this delight in Self-finding that the Self loses itself ? The Self remains all the while transcendent of its lower modes operating from behind as an unconscious force and enjoying (unconsciously as we do in dreams, imagination and fancy) the delusions in a sportive spirit and then delighting in the sublation of them. This capacity and love for projecting illusory objects and retracting them and the delight in this game of projection and retraction are therefore inherent in the Self or pure awareness whose undifferentiated state or mode is an extreme moment in an oscillating movement with several inner steps or stages. This metaphysics of the Self may itself be experienced as a reality and throw further light on our epistemological inquiry. It goes without saying that the two inquiries, the metaphysical and the epistemological, are mutually complementary and should go hand in hand in any comprehensive philosophical theory.

Vedanta as Transcendental Phenomenology

"WHAT is that which being known everything is known ?" This is the metaphysical question asked in Vedanta which clearly distinguishes it from an empirical question.[1] The question implies that, *first*, we have a *notion* of an absolute origin and explanation of all things or Being, and *second*, we have the capacity to know immediately or intuitively this metaphysical object. In other words, we have such a kind of knowledge of this object, Brahman or ultimate Being, that it cannot be said to be known by us nor to be unknown either. It is vaguely thought to be the ground of every empirical knowledge of ours.[2] The metaphysical quest is made possible by the paradoxical state of our knowledge about Brahman, for it could not have arisen, if we had either no notion whatsoever of Brahman or a perfect knowledge of It, as Sankara points out.[3] Now this metaphysical quest presupposes a faith in man, in his essential unity with the core of Being. Metaphysical knowledge is conceived as a realization of this unity which is somehow forgotten. All true metaphysicians had this idea of their task. Socrates was feeling his way to a concept of man such that men could know the abstract universals behind the sensible particulars, and, so, have knowledge instead of mere opinion. Only thus could he really answer the Sophists. Plato believed the soul of man to be possessed of knowledge of the eternal Ideas as it lived in the world of Ideas from which it fell and was imprisoned in the body after drinking the waters of Lethe. So for Plato "Our birth is but a sleep and a forgetting" (Wordsworth) and our knowledge is awakening and recollection. Aristotle's 'active reason' is the richest and the immortal part of the universal Mind, Nous. Thus metaphysical cognition is a simple exercise of a function inherent in human existence by virtue of which man feels with total certitude and security his oneness with the whole of Being. It is no dark groping of a logico-empirical or speculative kind and so there is no scope for profundity here which, according

[1] Mundaka Upanishad, 1, 1. 3-4.

[2] Kena Up., 1, 4, 2.2-4.

[3] In his commentary on *Brahmasutra*, Introduction.

to Husserl, is a sign of chaos and not of clear knowledge or science. The utterances of the Vedantic seers and other metaphysical masters are made in a simple language of discovery. They do not argue nor do they take recourse to inference, analogy, and postulation : "Listen, O the devas, I, through a discipline of the mind am getting into communion with Brahman that has revealed you," says a Vedantic seer.[4] Sankara declares that in metaphysical inquiry argumentation has no real force or foundation and revelation is the only source of our knowledge.[5] Arguments are used only to make revelation intelligible or plausible to the ordinary intellectuals or rational minds who do not have any intuitive knowledge so far of the metaphysical object and want it in terms of their empirical experience.

The positive and self-confident attitude toward man and metaphysics was abandoned in Western philosophy by Descartes and the rationalists who regarded man in his cognitive activity as an isolated Ego using his cognition as a tool to know Being as an outwardly given object. Naturally the whole of Being could not be grasped with the whole of his self. This meant a breakdown of both metaphysics and human existence in Western culture.[6] The rift between faith and reason, which appeared with Aquinas, became wide and permanent. German idealism sought to rehabilitate metaphysics as a rational science. Kant showed that metaphysics is impossible as an empirical science, that the idea of causality operative in the universe cannot be employed to yield us the explanation of the Universe itself, which as a whole cannot be explained in terms of one of its components. Thus metaphysics cannot be a matter of "telling stories", as Plato would say. Hegel recognized the essential unity of man in his metaphysical enterprise and Being; the former is the self-manifestation of the latter. However, all such efforts at reinstating metaphysics and man were not effective against the growing positivism of the Western mind that ended

[4] Svetasvatara Up., 2.5. See how the various levels of reality are gradually revealed in Bhriguvalli of Taittiriya Up., in Brihadaranyaka Up. (III, 6), and in Chhandyogya Up. (VII, 1).

[5] See his commentary on Brahmasutra (1. 1. 2; 2.1.6.).

[6] See Ludwig Landgrebe: "Phenomenology and Metaphysics," *Philosophy and Phenomenological Research*, Dec. 1949.

in a total surrender of all metaphysics and, so, all bonds that unite man with the supreme Being or Brahman.

The modern positivist has entered the scene with an orthodoxy of an opposite kind. He cannot make any sense of the metaphysical object which is said to be a self-sufficient explanation of the universe. For he feels that the whole of the universe is an open system and not a closed book and, then, he cannot think of an explanatory principle that does not itself stand in need of an explanation, but appears to be a necessary fact. If the supreme explanatory principle appears to be necessary then the universe itself that follows from it would so appear. But how it could happen the positivist cannot imagine for he has before him the type of knowledge that empirical science represents and that is nothing but a progressive mapping of the sensible world, enumerating the items we have there and tentatively establishing certain regularities observed in their dispositions. The positivist also fails to make sense of the first cause or ultimate ground of the world for similar reasons. And he suspects that the metaphysician merely quibbles with words and indulges in picture-thinking and emotive gratification. The positivist does not find any cognitive significance in the discussions of metaphysics. This is understandable, for some people may not see as far as others do, but the attitude that some positivists have adopted is quite unreasonable. For they insist that the metaphysical statements must be nonsensical and that the only sensible ones are those that belong to empirical science which deals with the sense-verifiable things. They maintain that a sensible idea must have sense-verifiable consequences by means of which it may be defined and verified either directly or indirectly. But this is rather dogmatic, for how can anybody know the whole realm of objects that man is capable of knowing and, so, determine the meaning of meaning ? The positivist's criterion of meaning is thus to be taken as a stipulation instead of an established truth. It merely expresses a particular attitude, one that helps science, and so, our practice. It expresses our biophysical nature. But we may have a metaphysical nature too. There may be dimensions of our human personality and the positivist has seen only one of them.

But the positivist's criticism of metaphysics has done one good to the latter. It has taught metaphysics to follow its own

method and not try to imitate science and tell stories. The scientific method in metaphysics would yield what is known as an inductive metaphysics which will offer us indirectly verifiable results bearing some analogy with sensible experience and possessing that public character which metaphysics as an esoteric discipline lacks. But such a scientific metaphysics cannot deliver us the goods, for it cannot arrive at the ultimate explanation of things; the most general hypothesis or formula that it can offer us will always be open to further questions, and, moreover, cannot claim certitude. So that if metaphysics remains loyal to its original and fundamental objective and means business, it must not flirt with the scientific method. If one seeks to present or develop metaphysical truths in the manner of scientific concepts then one must submit one's accounts to the scrutiny of the logical empiricists who will then not allow any concept which is not verifiable either directly or indirectly, and certainly not any claim to an ultimate explanation and certitude. Therefore the alliance of metaphysics with science, though it can succeed to some degree and help one in understanding in logico-empirical terms some of the concepts of metaphysics, cannot go far enough and after a point becomes a positive danger to our intellect that must seize the fundamental distinction between the metaphysical quest and the scientific one. As regards the esoteric or subjective nature of metaphysics and its incommunicability, this is not an insuperable difficulty, for it only needs on our part an initial faith in metaphysics and ourselves which will lead us to take up the metaphysical quest in its true form in right earnest and in good numbers. A community of experience will then be discovered and so, a language will evolve. After all, even our sense experiences are subjective in one sense, but become objective because we universally are concerned about them, and compare them with those of other persons, and thus develop a public science out of them. Metaphysics may as well be developed as a rational science provided our philosophers, instead of talking *about* metaphysics interminably, *do* it and talk it.

What, then, is the metaphysical method *per se* which we must adopt to do justice to our tradition of metaphysics and to ourselves as human beings, both of which are in utter chaos in this age of positive sciences ? Our answer is that it is the pheno-

menological method that Husserl introduced us to, particularly in the last phase of his intellectual development. The method followed in his transcendental phenomenology will not appear strange to a student of Vedanta who finds in his discipline the same transcendental analysis of experience leading to the discovery of layers of subjectivity and their corresponding objective worlds constituted by the former's projective activity. This following of experiences back to their origin or home, stage by stage, ending in the all-important and overwhelming result that the inquirer's self or his transcendental subjectivity is the metaphysical object he in his ignorance was searching for as an object apart from him and, as such, never amounting to that true metaphysical object 'that being known everything is known.' The greatest discovery of Vedanta was the principle of identity of the self with Brahman or ultimate Being and the inquirer has to realize this identity in order really to find an answer to his metaphysical query.[7] Thus metaphysics is a personal adventure with one's very being and not with ideas. A student of Vedanta is required by the orthodox tradition of learning this system to, *first*, listen to the Vedantic texts that contain the reports of the metaphysical experiences of great seers, *second*, understand the reports through intellectual exercise, and *third*, realize the experiences so reported through his own meditative search. Thus there is a place for discursive intellection in Vedanta, but this is to be employed in drawing an analogical knowledge about the metaphysical object which must be afterwards known *per se* in direct experience. The speculative knowledge about Brahman must be imperfect and mediate and only serves to draw the mind to the metaphysical truth which is presented first as a plausible hypothesis. It is only because of the logico-empirical bent of our minds that this procedure is required, but this is only a stage in the progress of the mind in its search for the metaphysical object. The mind has a notion of the object and, therefore, it poses the metaphysical question and will not rest satisfied with such answers as are given from its logico-empirical framework. Metaphysics is thus a serious busi-

[7] "That Thou Art" (Chhandyogya Up.), the prayer to the Sun to show its real form and let the devotee see the Person in it as his own self (*Isa* Up.); "He who knows Brahman becomes Brahman" (Mundaka Up.).

ness and not an intellectual pastime. The metaphysician knows the stake involved in his nature. Either he recovers his inherent bond with the ultimate Being and is firmly established in the universe or he is doomed to be a stranger in the world, "a guilty *thing* surprised." To philosophize was for the Vedantic sages to satisfy at once the urge for a final explanation of the world and the yearning to feel at home in it. And they realized that such a philosophical discipline cannot succeed unless it adopts the method of direct self-discovery and finds the whole universe as a manifestation of his essential self, unless, in other words, the whole universe is seen as "fallings from us, vanishings," or as Husserl might say, as constituted by our 'intentions' or acts of objectification.

Let us now apply the phenomenological method and see what follows. The later Vedantists made the analysis of error and dream their starting points. In such experiences we come across an apparently given object which yet demands to be explained in terms of the mind's own original power of projection and retraction. This is superimposition (*adhyasa*) of what is not on what is and also subsequent withdrawal of it when the illusion is said to be over. This performance of the mind is said to be indescribable (*anirvachya*) for there is no empirical analogy of it in ordinary experience where a judgment like "That snake in erroneous perception is but rope" or "The man in the dream was nothing" is nonsensical. The subject term here is not on a par with the predicate term, which therefore does not qualify it and the judgment appears to be self-contradictory. The judgment amounts to a declaration that the subject is unreal, but this is information about something that happened to the judging subject and not anything about the judged object. If "S is unreal" is conceived as an ordinary judgment, then S must somehow be in order to be unreal or non-existent and this will lead to the postulation of subsistent objects and so, to all the problems which are pretty insoluble. So that illusory objectivity is no empirical fact to be described or explained in the usual way. It is to be recognized as an original function of the mind that freely projects objects before it and adopts a mode of being such that it forgets for the time being their having been thus created and takes them for given objects. That which is immanent appears as transcendent; this is the

principle of error, illusion, and of dreams. Now this principle must be securely grasped and borne in mind in our metaphysical quest where our task will be to realize as immanent and self-projected or intended what appears as transcendent or given. In Vedantic terminology our task in metaphysics is to see through the illusory objectivity (*avidya*) at various stages of the self. While the self as an individual ego projects illusions and dreams, it knows, as cosmic self, the empirical world which is thus illusory from the standpoint of this cosmic consciousness. The illusory objectivity at this universal plane is known as *maya*. Sankara, like Kant and later Husserl, is a transcendental idealist and an empirical realist and we can appreciate these thinkers only if we think in terms of phenomenological analysis of experience and, so, of levels or orders of subjectivity and objectivity.

Now the cancellation of the illusion or dream reveals the empirical reality which is taken as given by the second order subjectivity that emerges from under the first that took the illusion or dream for reality. In fact, the second order subjectivity S_2, projected the first order objects, O_1, and adopted a lower self-delusive mode, S_1, to take them for given objects. The breaking of illusion and dreams is ultimately the result of the awakening of S_2 sleeping in S_1. We know how our mind works during our sleep. It orders the dreams which are wish fulfilments in a profound sense, as modern psychologists have shown, and it rouses us from them or deep sleep at an appointed time when we wish to get up. Thus S_2 does not totally lapse but goes into a state of torpor, so to speak, and holding itself in abeyance, assumes a pose of S_1. It enjoys the experiences of S_1, its play acting self, and we are said to enjoy our dreams, both good and bad, which, as the psychoanalysts have established, express our own inner desires (such as sexual urge, love of position and power, and sometimes even of suffering and death). Thus dreams are created by S_2 for a fuller and richer life of experience as a supplement to its own waking experiences that leave many desires unfulfilled.

Now this S_2 that takes the waking world for a given reality is in its turn an assumed pose of a third order subjectivity, S_3, which lies dormant in S_2 and creates and enjoys the objects of so-called waking reality. This S_3 has been realized by the mystics of all times and places as their reports show. The

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Vedic seers speak of a stage of self-realization when they are liberated though continuing a bodily existence (*jivan-mukta*). In this stage one feels the world to be a shadow-show or a dream that is freely projected by one's higher order self just as we enjoy our daydreams. One lives his worldly life only for the sake of play acting, so to speak. One literally realizes the world to be a stage where men play their various parts according to the sweet will of the author-director of the play with whom the liberated one is identified in spirit. The mind at this stage of inwardization enjoys its worldly joys and sorrows just as we ordinarily enjoy those of characters in a novel or drama or of our own imagination. This third order subjectivity or self is the God of religion, for it is the universal creator and correlator of images who appears to the individual, S_2, to be a real object forming a system or cosmos with rigid rules of coexistence and succession. Now, we have evidence for this stage of the self from the testimony of the mystics including the Vedic seers. We, as Vedanta also directs us, have to listen to their reports,and to understand their message through analogy with ordinary experience by means of critical and speculative thinking, and lastly, we have to verify in experience or realize the content so far known in an analogical manner as a possible entity. But even before this firsthand knowledge of God is achieved in us, we can have some assurance of it from certain more readily available experiences.

First, as Kant pointed out, the categorical forms of the empirical world, such as space, time, substance, accident, causality, reciprocity and some others, belong to the empirical egominds uniformly and are read into the world which, therefore, as it appears to us, is not ultimately real but mind-dependent. Now Kant's thesis is to be taken neither as a logical derivation from empirical observation, nor as a psychological analysis of our attitude toward the world. He explicitly forbids these interpretations. In the former version of his thesis the categories lose their *a priori* character, their necessity and universality, and become mere empirical generalizations, while in the latter version they become descriptive of man's temporary mental behaviour. Kant's intention was to offer the categories as *a priori* principles of our empirical knowledge, as 'transcendental' presuppositions. We can understand Kant only when we take his analysis as a phenomenological one of discovering what

is necessarily implied in our empirical knowledge, this implication being neither logical nor psychological. Kant's own justification for the categories in his 'Deduction' is very confusing and unconvincing. Yet his thesis may readily be accepted as correct. His real justification seems to be a phenomenological one, only he did not realize this. He simply 'saw' or intuited the forms of empirical knowledge as being in the mind; being ordinarily unaware of this, he takes them to be given from the outside world, and, so, to be contingent, and thus falls into scepticism. Now Kant's thesis means, in the context of our phenomenological scheme, that the categories are fashioned by the third order subjectivity, S_3 or God in us, who enjoys them from behind its assumed self, S_2, which takes them for given empirical laws. The individual and isolated minds or egos cannot constitute their own common nature according to a single uniform plan. This requires some power above them. A phenomenological and transcendental analysis, however, reveals to the analyst the categories as forms which he himself has fashioned and, so, he declares them to be *a priori* principles of empirical knowledge. In other words the analyst feels himself at one with God. Kant surely felt this when he said that our understanding does not create but makes nature. One who offers this doctrine, "the Copernican revolution," as a discovery and not merely as a speculative theory, must feel within himself the silent working of a higher self. This signalizes his faint rousing from the sleep and dream of life. Theologically speaking, this marks the advent of grace and salvation in his life. Now, Kant felt that our understanding could not create nature, for the matter or contents of our empirical knowledge, the sense-data, appeared to him transcendent or given from outside. But further meditation might show him that even they are ultimately mind-made. This realization would be sharing God's vision of things. Therefore philosophy, if it is a serious discovery of what is really behind appearances and not mere speculation on the analogy of appearances, is identical with active self-knowledge and salvation. Kant, however, stopped at a halfway house, and so, was sceptical of metaphysics. He was not aware of the phenomenological method he implicitly adopted in his 'transcendental analytic.' But he could have at least thought of our doctrine which alone could solve the problem

his philosophy raised and left unanswered. How could it happen, he might ask himself, that the sensible manifold said to be impressed upon the mind by a foreign realm of things in themselves fall in with the mind's laws ? There must be some affinity between the matter and form of knowledge, and how else and more simply may this affinity be explained than by the hypothesis that both are the creations of the same mind ? So, we see that both what Kant positively offered us, and what he failed to offer but is demanded by his complete thesis for its rounding off, point to our contention that we have a higher-order subjectivity implicit in our empirical waking one.

Second, this idea of a higher-order common mentality, S_3, working from behind the individual mind, S_2, is further made plausible as a metaphysical hypothesis by the results of research work on the psychology of speech and mental development of children. These show that there is no one single fixed and determinate world for all minds, but there are 'worlds' corresponding to the performances of language and of naming things. Language and the world of facts are not as opposed as they are thought to be. Language is the means of comprehending and categorizing our experience, and describing is not just reproducing in words what is apart from them, it is more like seeing faces in the clouds. In other words, it is constitutive of the world said to be described by it. Researches in animal psychology and speech also confirm this thesis of relativity and subjectivity of worlds. Some modern physicists like Poincare and Einstein and some philosophers like C. I. Lewis and others arrive at this thesis from general considerations and speak of creativity of the mind in science. A continual process of redefining the basic categories of empirical knowledge is going on in science. The concepts of space, time, substance, and causality in modern physics are different from their classical forms. Now, all this tends to show that the higher-order subjectivity, S_2, devises various systems of experiences and corresponding forms of speech, and takes them respectively for given worlds and their reproductive expressions. Kant noticed only the forms of experience and language of the highly developed consciousness of the enlightened human society of his time and took it to be fixed for all minds for all times and places. His insight revealed the mind-dependence of a particular form of world experience. This form

being found common to a large section of individual minds, a common base for them had to be imagined. The *a priori* character of the categories pointed to the hypothesis of a common mind working behind the individual ones. But the insight of the psychologists and philosophers has relativized the categorial feature of our experience and has made the hypothesis more plausible. In Vedantic terminology this insight may be expressed by saying that the warp and woof of this world are but names and forms (*nama* and *rupa*). This identification of the world with the form of language or speech has a parallel in the Western tradition in the Greek concept of Logos as the origin and foundation of the world, and also the Biblical concept of the 'Word' which is said to have been originally with God and then became incarnated in the world. All these ancient insights with various degrees of clarity and adequacy can be best understood in the light of our phenomenological findings which may thus gain some initial trust from the speculative thinkers, who may then adopt the right method, the phenomenological, to know the truth about these matters.

Third, our thesis regarding higher-order mentality behind the ordinary one is further supported by certain extraordinary mental phenomena observed from the very ancient times and more or less made plausible in the light of modern researches in parapsychology. Extrasensory perception, precognition, thought reading, and thought transference, hypnotism, and telekinesis are now recognized phenomena. Also prophetic and telepathic dreams have come to be acknowledged by modern investigators like Myers, Dunne, and Tyrrell.[8] C. G. Jung believes that some of our dreams express our experiences of the forgotten past of the race and prove the existence of a "collective Unconscious" or "a sediment of our experiences of the universe for all times."[9] These phenomena have led the parapsychologists to recognize a common substratum of our apparently isolated minds. However, this postulate of a universal higher-order mind on the analogy of our individual one is always a puzzle to our understanding for the analogy is never complete.

[8] F. W. H. Myers: *Human Personality and its Survival of Bodily Death* (1903). J. W. Dunne: *An Experiment with Time* (1937). G. N. M. Tyrrell: *The Personality of Man* (1947).

[9] See his *Collected Papers on Analytical Psychology* (1917).

One cannot imagine how a single mind can work in so many ways through so many empirical minds and take up so many attitudes or statuses at once. Only a direct experience of this mind by becoming or realizing what is thus analogically thought of by scientific speculation can deliver the required goods to the serious enquirer who, therefore, must take the all-important plunge in meditative search.

Fourth, the disinterestedness of the mind with regard to the egotistic attachments and a dawning of a universal outlook marks our intellectual, religious, moral, and aesthetic attitudes. An impersonal search after reason or power behind things and a realization of it as not alien or transcendent to our mind is the ideal of knowledge. Scientific knowledge is only a first step toward this ideal and the scientist who speaks of the impossibility of any further knowledge beyond the scientific is a prey to despair and dogmatism. Our intellectual quest is after "that, knowing which everything is known," and we cannot possibly stop short of this goal. But this shows that our intellectual adventure is an expression of and a pointer to a higher self that we possess. The fact of our metaphysical quest, as we have already explained citing Sankara, proves the ideal of knowledge we tacitly hold in our mind. The quest only makes explicit what is implicit and vague. Our religious efforts too reveal the same story. We want to be at home in this world which seems to surprise and terrorize us. We want to fraternize with the world and its creator. We wish to be worthy and welcome inmates in this wonderful universe. We want to feel it to be our Father's house. And we also want to own other persons as our brothers. But all this wishing signifies the existence of the wished for object as our thirst does that of water. The world must be our home, only we have to realize this and for this we have to rise to the third order subjectivity or God-consciousness that is sleeping in us. The moral attitude is also an emancipation from the egotistic one and an identification through sympathy with other selves. It is self-universalization and self-sublimation. Therefore our moral culture also signifies the working in us of a higher self as many moral philosophers have recognized. Our artistic activities too are similarly significant for the key principle of art or of the production and appreciation of beauty is disinterested contemplation and imaginative sym-

pathy. Beauty is said to be a bridge between man and nature. The object of beauty becomes an extension of our consciousness, an embodiment of our feelings and ideas which it is said to express. And the universality of art or beauty points to a common mentality behind our apparently diverse ones and so, appreciation of art or beauty, as Tolstoy observed, socializes the self. Art thus emancipates man from his ego and brings him close to recognition of a higher universal self working in him from behind.

The third order subjectivity, S_3, above (or behind) the second order, S_2, may be established by phenomenological probings into our mind and it can also be presented as a probable metaphysical postulate to those who are not initiated in this direct method of discovery, but would follow the hypothetico-deductive method of science to obtain explanations of phenomena. The next step in phenomenology is to discover a fourth grade of subjectivity, S_4, behind the third, S_3. In this too we may follow the Vedic seers in their relentless self-analysis and arrive at what they have described as Brahman without differentiation, indescribable in empirical terms except by negation (*neti*). This S_4 is pure subject-objectless consciousness which is implied by our conception of a creative mind, S_3, that dreams this dream of life as so many egos, S_2. To S_3 the world is a dream work against which it is a creative and real entity. It cancels the reality of the individual objects throwing them as illusorily projected, but feels the necessity of creation or projection, and so, is faced with objectivity, without any objects, or in other words, with the possibility of objects. There is thus subject-object duality in S_3 which knows itself as a subject against the form of objectivity or 'objects in general.' When the stage S_4 is reached all this necessity or urge for creation appears self-projected and illusory and, so, all objectivity vanishes. The self at this stage appears to be absolutely free. Brahman of Vedanta is best understood as pure consciousness, absolutely unconditioned, and free, and so, full of bliss and beatitude. God (*Iswara*) is Brahman in the self-posed mode of creativity, that is, He is Brahman as standing over against the form of objectivity or *maya*. God is called in one Upanishad[10] the lord

[10] *Svetasvatara*, IV, 9-10.

of *maya* (*mayadhis*) who, having created this world by His magical power, enters it and becomes bound by it. The statement implies a threefold gradation of consciousness, one S_2 that takes the world as reality, another S_3 that creates it and takes it as a make believe affair, and another S_4 that takes this creation itself in the same manner. For that which is said to create the world by its magical power (which is interpreted by us as the power of projection we meet in dreams and vivid imagination) must be considered apart from the exercise of this power. The poet or the musician is essentially a human being not to be defined by his artistic capability. This stage of subjectivity, S_4, where all sense of subject-object duality vanishes and to which nothing is given but everything is freely created in a sportive mood and posited on lower grades of reality, is the goal toward which a phenomenological analyst is led. The latter cannot rest satisfied with any stage below this final one for he is then faced with an object or element of givenness which puzzles him. Since there is no sense of the object at the highest stage, there is nothing that transcends it or lurks behind it and everything is immanent in it and perfectly clear to it as are those objects to us which we freely imagine. So there are no unanswerable questions or puzzles for the enquirer at this stage where he is perfectly satisfied and quiet in his mind. Brahman knows the empirical world of our common experience as a dream within a dream, a dream that is fully understood as a work of fancy. Therefore to know Brahman or S_4 as a stage of subjectivity is to know that which being known everything is known, and to be identical with this ultimate cause and explanation of things. The Vedantic seers have repeatedly told us of the identity of the ultimate metaphysical knowledge with the ultimate self-realization on the part of the enquirer as we have already mentioned before. The enquirer knows his own self to be the ultimate basis of all being he has been searching after, his real self behind his many assumed selves with which it had allowed itself to be covered up and concealed to itself as we do in dreams or fantasy. How this could be is a lazy question asked by the scientific intellect which assumes that everything must follow the pattern of its empirical experience and that inference from and analogy to this experience are the only ways of knowing the mysteries behind nature. The scientific mind must be told that we have more

things in the world than are dreamt of by it and the only way to know them is to listen to the words of the ancient seers, ponder on them, and then delve deep into ourselves to verify and possibly improve upon them by actual experience. We must not merely sit on the shore of the ocean and speculate on the things that may lie at its bottom, we must take the plunge. If we take this all-important step in philosophy then we will naturally have scope for collaboration of efforts and mutual checking of results, and so, will be able to develop metaphysics as an interpersonal body of knowledge like science. To doubt the possibility of such a science and condemn all meditative researches in metaphysics as subjective illusions on abstract and antecedent grounds is idle and dogmatic. The idle man is the greatest prophet, goes the proverb and, of course, he has to be dogmatic too. To the true aspirants after metaphysical knowledge the Vedic seer urges, "Arise, awake and stop not till the goal is reached, the path to the self is as difficult to pass over as the sharp edge of a razor."[11]

[11] Katha Upanishad. (1, 3.14).

A Scientific Approach to Vedanta

THE purpose of this paper is to bring out the philosophical outlook of modern science by examining some of its methodological developments and important results, and to develop this outlook in the spirit of science. The outcome of this study will be a philosophical view which may be called scientific in the sense of being a speculative extension of science and not of being precise, complete, or absolutely certain. In fact the popular connotation of the adjective 'scientific' is very much mistaken, for science is admittedly incomplete and probabilistic, and, though it aims at as much precision as can possibly be achieved in any given area of investigation, it actually fails to reach its ideal and there are areas where it has to content itself with very rough qualitative results. All this follows from the very complex nature of the world of our experience that defies a simple and exhaustive analysis or systematization, where the more we seek details the greater is the vagueness and uncertainty, and where we cannot be sure that the vast number of unobserved cases will in future behave like the observed cases. The method of science being inductive, based ultimately on our experience of a limited number of instances, the scientist cannot be certain of his results. Even if we assume uniformity of nature we cannot guarantee the truth of a generalization or an hypothesis in science, for how can we know that we have not been deceived by a mere accidental regularity and that a better hypothesis might not be there to take care of the facts. It is quite possible, and often seen in the history of science, that with the discovery of fresh facts older hypotheses are modified and even replaced by newer ones that have more systematic import and empirical confirmation. So that a scientific approach is marked by hypotheticism and probabilism, in other words, by a tough-minded acceptance of the partial and tentative nature of our knowledge of things. As Russell says, the uncertainty of knowledge is a doctrine that inspires science and scientific philosophy.

We generally mean by a scientific approach one in harmony with the spirit of science as described above, and particularly one which uses modern science as its springboard and point of

departure. Because of this approach we will not speak of our notion of reality as ontological, that is to say, as signifying what really exists, for every existential statement is conditioned by many other statements and its truth is never unconditional. How can we ever tell that what we see or think to be existing, whether it be this obvious perceptual world or any ideal one, is really or absolutely existing and will not prove a passing appearance in the light of subsequent experience ? This a consequence of the empirical attitude that cannot make any sense of necessary or absolute existence. Whatever appears to exist must be just a matter of fact and not of logic, and we can very well think of its non-existence. Facts are given; they are just 'brute facts', and, as such, contingent upon and opaque to reason.

Following the method of science, we will posit an entity as the highest principle and think of a process by means of which it may be said to give rise to and explain the world. All this will be hypothetical and imagined on the analogy of our given experience, and the only argument for our adopting such an entity and its working will be their adequacy in dealing with the facts to be systematized and explained. And, if we at all believe in the existence of this entity in any sense, we will systematize and explain it on the hypothetical principle that there are different levels of existence, and what is experienced at one level may have its analogue on another level. It is under this condition that one believes in the existence of the micro-physical entities of modern physics which are empirically imperceptible, but are logically not so, for one can conceive them to exist on the analogy of perceptible particles.

Now this hypothetical entity reached scientifically by us will be a cosmic spirit and the latter will be imagined to operate after the manner of our dreaming in order to explain the world and our knowledge of it. These notions together with their implications will make the system very much like that of non-dualistic Vedanta. So that we may call this study 'a scientific reconstruction of Vedanta'. The chief difference will be seen to lie in this. Vedanta offers the concept of the cosmic spirit and its action on the basis of the revelation recorded in the Upanisads, and advances some arguments of an analogical kind to

enable us to have some initial intellectual sympathy with these notions. It rests for its truth on revelation and asks us to verify it by our own mystical experience. But our present approach being scientific, we cannot ask anyone to believe in the testimony of the Upanisads, nor can we speak of any extraordinary faculty which can validate their metaphysical assertions. We can only posit the idea of the cosmic spirit as a significant hypothesis to explain certain features of our experience of this world. However, we do not dogmatically deny the possibility of extraordinary faculties of the mind, and, consequently, of a direct knowledge of metaphysical objects. A scientist keeps an open mind and will readily admit a supra-mind and the cosmic spirit as facts if he comes across sufficient evidence to support them. Just as he seeks to verify, by means of instruments like the microscope and telescope, perceptible objects like germs and heavenly bodies which were at first postulated to explain certain observed phenomena, in the same manner he should be prepared to follow the instructions of *yoga* that claims to develop a super-sense and to lead by its means to a direct knowledge of the cosmic spirit. This will be the practical side of a scientific philosophy, its speculative side is what we are concerned with at present.

SPACE, TIME, AND MATTER

The new concept of space and time introduced by Einstein replaced the Newtonian ideas regarding them which made space and time absolute and infinite receptacles for events. According to the new theory they are conceptual frameworks that help us most adequately to organize observable phenomena. Space is now conceived to be closed or curved, it is finite though boundless; to be imagined by relating it to its two dimensional analogue, the surface of a sphere. This space is welded with time and matter so that the new concept of space-time-matter explains the mechanics of the universe more simply and consistently than the old separate concepts of space, time, and matter, and avoids the problems and paradoxes associated with the infinity of space and time and their relation to matter. But what is more important for our purpose here is to see that it is in modern physics that we have come to take space and time as our constructs which can be modified to fit our experience. Kant spoke of space and time as modes of perception but he did not

speak of them as free constructs or postulates. He thought they were necessary features of phenomena. Modern physics has relativized the categories of Kant, treating them as our conceptual frameworks devised to meet the evergrowing challenge of experience. We are free to revise them. The mind thus contributes to knowledge which is, therefore, not absolute and objective but provisional and relative.

The status of matter too has undergone a sea-change. The older notion of matter as something constant and rigid has had to be given up in the face of new findings. Matter is now found to be a form of energy : we can transform mass into electromagnetic rays and vice versa, but we cannot say whether the total matter-energy of the world remains constant, for there is some evidence that matter is disappearing on the one hand and appearing on the other, but we cannot tell whether a balance is being maintained. Anyhow, we find that our conception of matter may more usefully be replaced by that of events or perceptual occasions, for matter is our construct which we can give up if we find it unhelpful in science. Events are what we actually meet in experience. The material substance that is thought to be the core or primary stuff of perceptible qualities has been given up as a scientific entity, whether as a particle or wave; it is now retained only as persisting illusion caused by our ordinary language that must speak in a subject-predicate mode. We say, 'It is such and such' and feel that, apart from the qualities 'such and such' that define the object, there must be something corresponding to 'it' that holds them together. But our ordinary way of speaking and thinking cannot always determine our philosophy. Science has come to treat material substance as a ghost. We have only the perceptual data and their regular coexistences and successions giving rise to determinate physical objects with definite properties.

RELATIONS OF COEXISTENCE AND SUCCESSION

We now come to consider the relations that are found to exist amongst the perceptual data. These were regarded as necessary or absolutely binding by the rationalists. But, as Hume showed, this is just a matter of our custom and habit or psychological fixation, we have no reason to believe that they

will necessarily hold. For necessity is either logical or psychological. The relations in question cannot be logical for we can conceive of their failure to hold, and they cannot be psychological for we cannot conceive nature as a conscious being having alternative courses before her but compelled to choose only one course and so behave in a certain way and not in another. The relations only *appear* to be necessary because we expect them to hold uniformly. But Hume and the empiricists could not explain why, in fact, we have such marvellous regularity in natural phenomena, and why our expectations are so uniformly fulfilled. Science too cannot and need not speak of these laws of coexistence and succession as necessary, it only searches for them and finds them and expects them to hold good in future. But, as it is inductive in method, science cannot tell whether nature everywhere is law-abiding. Science can do its job if *some* phenomena show regularity. Recent research in physics has found some loose-jointedness in the microphysical realm : it can only speak of the probability of an electron being at some place, so that if we do not find an electron at that place, even if the probability of its being there may be very high, the statement about its position is not falsified. Yet this recent development in physics assumes some average regularity in the micro-world and any critical-minded physicist will ask the question, why does nature show such a regularity ?

This metaphysical question is of a second order arising out of the first-order questions regarding particular regularities. Kant considered the general rule of regularity to be necessary, as without it our knowledge would be impossible, but he did not ask himself the question, why should knowledge be necessary ? We see that knowledge might be absent, the phenomena could be haphazard. Further, a thoroughgoing operation of the rule in every detail is not logically necessary for the probability of our scientific knowledge which, as we said above, requires that *some* phenomena should show *some* regular feature. So that the question, why should some phenomena be at all regular ? was raised neither by Hume nor by Kant, and a scientist as such has no business to raise it. But it is a question that naturally rises in the scientific mind that deals with natural laws, for such a scientist finds his laws to be not necessary, and yet they are there.

CAUSE OF REGULARITY AND ORDER IN NATURE

Now a scientific answer to this question will be in terms of an hypothesis which has to be intelligible because of its analogy with our experience, and which has to be as simple and adequate as possible. We have to search for a suitable model to account for the regularity and order we find in nature. Regularity and order, like spatiality and temporality, are ideas by means of which the mind understands the brute fact, the given fact, the phenomena. These ideas are mental and yet we feel that they are not subjective in the sense that they are universal and apply to nature. This means they are ideas in some universal mind which we share as we come to realize them. But two questions raise their heads immediately, one respecting the relation of this universal mind to the phenomena, and the other, respecting its relation to the individual mind.

The phenomena, to be ordered by the universal mind under its ideas, must themselves belong to the mind, for how can a mind order alien objects ? We have in our experience, our imagination producing images and ordering them according to its wishes, and we can conceive a universal mind projecting and ordering the phenomenal world after this model. As to the second question respecting the relation of the universal mind to our individual minds, we can imagine this as being similar to the action of a hypnotist on a patient who perceives and thinks as the former wants him to. We can imagine a universal hypnotist holding us under an hypnotic spell and making us perceive things, inter-subjectively and inter-sensually, in a regular manner. This regularity has two aspects. One relates to the correlation of objects sensed with our bodily positions and the conditions of our sense-organs, nervous system, and physical states, while the other relates to the correlation of these objects with other sensible objects. The former kind of regularity leads us to think that our bodies and physical states (*e.g.*, attention and memory) play a causal role in perception, but we forget that these are themselves objects of perception. The second produces the ideas that objects are given to us for we cannot control their order. In fact, we distinguish natural objects from our imaginary ones—such as we have in our dreams and fantasies—by the objective order that we find in the former.

This order is the *test* of truth or reality of sensible objects, but the *meaning* of truth or reality is constituted by their being given to us from some external source. This source must be a conscious and intelligent one for how else can it influence our minds and produce perceptual objects in such marvellous patterns ? The givenness of the order as well as the objects themselves is experienced, but the agent to explain it is a matter of conjecture or analogical thinking.

Therefore, the objects and the order are all in the universal mind as imaginary objects, and their particular orders are in any individual mind. The hypnotic effect of the former mind consists in making us perceive things in the manner it pleases. It causes systematic hallucinations in our minds and this explains the regularity and order in nature which exists in this universal mind. This is what Berkeley taught us. This explains our knowledge, or systematic experience, of nature. This universal mind may be called God who shadows forth this world in our minds and puts some order in it so that we may live in it and learn to expect from the observation of certain things certain results and thus gain knowledge and power over nature. Viewed religiously, we feel reverence for God as He makes our life possible and so rich in variety. Nature becomes the language of God besides being a home for us. Science, without this sort of philosophical development makes nature opaque and alien to us.

SOME PARALLEL VIEWS OFFERED BY MODERN SCIENTISTS

The views of Sir James Jeans, Sir Arthur Eddington, and Albert Einstein may be noted in this connection. They also reached a similar conclusion following similar considerations. Jeans argued that modern physics is now mathematical and mathematics is, *a priori*, not an inductive science; so a supermathematical mind, God, must be the creator of this world. But his argument proves only that God must be a mathematical designer and not a creator. We can, however, supplement his argument by stating that since a designer cannot design unless the material he works upon is as pliable as his own imaginary creations, the world must be conceived to be God's imagination. Eddington argues that sensible objects are produced by the mind out of the meagre messages from a non-sensible world by

means of our *a priori* ideas. The scientific objects are also our constructs out of other sensible objects ; so that the world of sense and science is raised on a substratum we do not know. But what can this be but our own immediate consciousness which is the only reality we know for certain ? But Eddington is not clear whether this consciousness is one's individual consciousness or some universal one. One's mind may contribute much to one's knowledge of the world, but the world is not one's creation. Kant saw the point when he declared that the mind makes nature but does not create it. Eddington confused the world of physics with the physical world and he did not see that a symbol must have an object which it symbolizes. So he fell into a subjectivist position and spoke of the world as symbolized and mind-made. He should have considered the aspect of givenness of sensible things and their inter-subjectivity, and then posited an external source, of course a mental one, of our sensible experience and, therefore, ultimately of our world of physics.

Einstein believes that our concepts in science are our free creations and yet they apply to the given world that is extramental. This situation leads him to speak of some 'pre-established harmony' between the mind and the world. Einstein did not develop his thought further. Had he done so he might have come very near our own answer given above, to the situation which, he rightly observed, made him feel religious.

THE VALUE AND LIMITATIONS OF THIS SOLUTION

The solution that we have advanced in terms of the cosmic mind imagining the world, is valuable from a scientific point of view in so far as it explains the non-necessary character of the laws of nature and the elements of contingency, loose-jointedness, admitted in modern physics, also the spontaneity and purposiveness admitted in the biological and psychological sciences. The so-called laws of nature being willed by a free cosmic spirit may very well be understood to be regular yet neither strict nor rigid. Again, the sensible world, being but ideas in the cosmic mind, has no material substance at its core and no absolute space and time as receptacles for the material things. Thus our theory is supported by some of the basic tenets of modern science and it also explains them.

This cosmic mind cannot be imagined more definitely as possessing the characters, mathematical, artistic, or moral, that different thinkers attribute to it. For this mind cannot itself be determined by any of the characters it creates. Again, this cosmic mind cannot be in space and time which are its creations. We see things as extensive and successive, the cosmic mind sees them in one aspect. The world is to be viewed as an expression of a supra-mental will in the medium of our minds.

But the difficulties of this theory become apparent at this point. How can the cosmic mind act upon our minds from outside ? The analogy of hypnotism goes some length towards answering this question but it falls short of complete satisfaction. The mind of the hypnotized person must be conceived in some manner to be continuous with the mind of the hypnotizer, otherwise the action of the latter on the former remains a mystery. Our individual minds must be sharing some common mental continuum; we must be somehow inside the cosmic mind. How else can telepathy and hypnotism be accounted for ?

Thus we have to revise our ideas a bit. We have to conceive our individual minds as modes of the cosmic mind just as our dream-mind is a mode of our waking one. This analogy of hypnotism or telepathic communication has to be replaced by that of auto-suggestion found in dreams and imaginative recreations. We have first to note the sort of experience we have in the latter situation. We then have two minds, so to say; one mind causes certain perceptions in the other which takes them as given realities, while the former mind enjoys them from behind. The dream-mind suffers the joys and sorrow blindly, but the waking-mind, that causes them, actively enjoys them for their sheer energy and variety. That this active mind is really working from behind may be founded on circumstantial evidence, for, from whence can we think the images appear if not from our own minds ? We can also detect in the images and emotional associations they carry, our own wishes and desires that do not find any expression or fulfilment in our actual life. The bad dreams we suffer also satisfy our waking self that sometimes loves to have a taste of disagreeable things. We want happiness, no doubt, but we also want diversity that intensifies our consciousness and gives a sharp taste to our life. Much disagreeable dreaming is, however, just a continuation of our

apprehensions in our waking life. We undergo them in order to know what they are like—so that we may take care to avoid them in actual life. But we do desire painful experiences for their own sakes too, and this is borne out by our love and enjoyment of suffering depicted in art, particularly by our delight in tragedy.

If we are convinced about this dual mind we can conceive, by analogy, that our waking minds are modes of one cosmic mind. The latter is then not external or transcendent but immanent, and we can imagine how the world that we perceive may be impressed on our minds by the cosmic mind. This postulate of an immanent over-mind, or God, will explain and be supported by the assertions of the mystics who speak of the essential identity of the human mind with the cosmic one. The Upanisads speak of it ('That thou art'), the Christian mystics, Eckhart, Ruysbroeck, St. Bernard and others, and the Islamic mystics called Sufis, affirm their experience of their oneness with some indeterminate cosmic spirit. But we must be careful here not to treat mystical experiences as a conclusive proof of our theory which must be held, as, at best, a plausible hypothesis. For one must not dogmatically believe that the mystics have touched the bottom of experience, that fresh evidence will not turn up to demand a revision of our present hypothesis.

THE NEW OUTLOOK IN SCIENCE AND PHILOSOPHY

This theory of the cosmic mind explains amongst other things the new outlook of science which no longer searches after any external substance or primary stuff of the world, and treats laws of coexistence, and the succession of phenomena, and spatio-temporality as but ideas having no permanency and necessity about them. This new approach to nature is interpreted, in our theory, as the scientific mind becoming more self-aware and, therefore, dimly conscious of the world being a projection or free creation of the cosmic mind, which is but human mind in its foundational aspect. The scientist's mind comes back to its own original state as it reflects on its discipline and he realizes that what appears to be given from outside and necessary, is but freely created by his own original self; a self that enjoys this creation and at the same time assumes such a mode of self-

oblivious passivity that it takes as a given reality that mode which it really creates. It takes with one hand what it creates with the other. Thus the development today of the scientific mind marks a stage in the return of the self-deluded spirit to its own. The philosophic mind, too, that has come to suspect and avoid a naive empirical realism and to recognize transcendental idealism, shows an awareness of the cosmic mind.

The world is regarded as somewhat mind-made; not material and given to the mind. The individual mind is seen as a mode of the cosmic mind. We can also see how our aesthetic, moral, and religious activities can be better understood in the light of this philosophy. In aesthetic contemplation we enjoy projecting our imaginary objects and emotions and treating them as if they are real, this make-believe or conscious self-delusion is the repetition, on an individual basis, of the similar activity of the cosmic mind on a universal plane. Aesthetic delight gives us a foretaste of the delight that we might have if we could identify ourselves with the cosmic spirit. The ancient Indian students of aesthetics spoke of the aesthetic delight as the 'very twin of the taste of Brahma' (*Brahmasvada-sahodara*). As for morality, its essence is imaginative sympathy with others, and realizing a greater self than one's individual ego which is transcended. In this way moral progress means an increased self-awareness of the cosmic spirit that may be said to be coming into its own in the virtuous man. The morally advanced man takes a disinterested view of the world which has no hold over his passions and which appears as a stage where he plays his part; his actions spring from a motiveless desire to do his duty. Finally, one's religious experience consists in believing in a personal God as the creator and governor of the world and in establishing a kinship with Him. Therefore it involves one's rising from the state of total self-forgetfulness and passivity to one of partial self-awareness. We can thus see how our aesthetic, moral, and religious realizations may be considered as marks of our spiritual awakening in greater or lesser degree, and how one can enhance one's awakening by reflecting on these experiences and bringing out the implications behind them. Man's spiritual progress means his increasing insight by virtue of which he realizes more and more clearly that which he considered as external is, in fact, internal to him.

UNITY IN DIVERSITY : THE THEORY AND VEDANTA

Just as our intellectual and other development may be treated, in our present theory, as marks of self-recollection of the cosmic spirit, so also retrogression, or a lowering of intellectual and other levels, must mean for us an increase in self-delusion or a degeneration of the cosmic spirit that sinks as a result into a state of passive dreaming. Since we can see in the world simultaneous progress and regress in spiritual matters, we are faced with the question, how can the same spirit at once rise from and fall into its dream state ? We have to admit then that the spirit enjoys both the movements, and seeks fulfilment of its dual desire through different modes of its consciousness. This cosmic spirit is thus protean and myriad-minded. We can find a faint analogy to it in the personality of a powerful dramatic poet who may be living in imagination the diverse characters he is depicting in a drama. At that moment the poet has no self of his own. There is a similar kind of unity in the cosmic spirit and if we bear in mind that all variety and movements are in time and are adopted modes of the spirit, then the aspect of unity or identity of this spirit becomes more real and original than the expressions of it. The cosmic spirit itself is without any human character or analogy except imaginative creativity.

This makes us pause and ask a question on general method. How can an entity like this universal cosmic mind really help us in understanding the world if it is so bare of attributes and if it is consistent with everything we find in the world where it makes no difference ? There is nothing in our experience that can disprove our theory, which leads to the suspicion that the theory may be factually insignificant. Thus the positivists object to any metaphysical theory. What is the use of having an Absolute, they say, which is the common premise of all deductions to all factual statements ? If everything is there because ultimately there is the Absolute, the latter can be safely eliminated from our discourse. The Absolute leaves everything as it is. In reply, we may point out that a metaphysical theory, though it may be devised on the analogy of a hypothesis in science, serves a different purpose from the latter. A scientific hypothesis posits a definite physical object having definite consequences all of which may not be verifiable in experience, and so the hypothesis

is, in principle, falsifiable. A metaphysical hypothesis, on the other hand, does not posit any one physical object amongst others but posits a principle which will not account for particular items of experience and will, therefore, not be disproved by them, but it will account for our experience and factuality as such. The positivists do not make any sense of this business of metaphysics as they do not ask the question, why should there be facts and why should we know them ? We think it is a matter of being less or more responsive to the total situation we are in and, from the standpoint of our own theory, we would say the positivists are not sufficiently awakened from the dream of life.

The metaphysical theory of ours is surely consistent with everything that may happen in our experience, and, therefore, it is neither true nor false in the ordinary sense, but is not insignificant or worthless for that reason. This is because it offers us a principle in the light of which we can see and react to our experience in a particular way. It gives us a vision of the world and our life in it, which vision has its individual character. Though it leaves all the facts of the world as they are, it makes a vast difference to our attitude to them. There are alternative metaphysical theories which are raised on the same factual basis but which give different views of the facts. The acceptance of a metaphysical theory depends not so much on any arguments, for every theory squares itself with all the possible facts, but on the personal factors of a particular thinker for whom it means a total organization of his aims and attitudes of life. In this sense a metaphysical theory such as ours is more significant than any scientific theory.

We can readily see that our theory is much like non-dualistic Vedanta which speaks of an Absolute Spirit as the ground of all things. This spirit is said to be without any determinate character we find in our experience; it is characterized as eternal, pure, intelligent, and blissful, but these predicates have to be taken in their transcendent and not ordinary sense. The spirit is said to be known through negating every empirical characteristic that we find in the world (*neti, neti*). This spirit is our fundamental self ('That thou art'), and the world we generally take for reality is but an illusory creation (*maya*) undertaken in sport (*lila*) for its own enjoyment. We can, if we desire, rise from our passive state of being, in which we take the world for

reality and blindly suffer our worldly joys and sorrows, to the state of this cosmic spirit and share the joy of creation. The dream-analogy is extensively employed in Vedanta literature to make the concepts of *lila* and *maya* intelligible to us. The only major difference between Vedanta and our present philosophy lies in the approach, for, as we noted at the outset, we postulate this cosmic spirit and do not speak of proving it as true. But Vedanta believes that its assertions are true by virtue of the direct verification of them in the extraordinary experiences of the Vedic sages.

We believe, however, that if we are satisfied with our theory, because of its simplicity and adequacy in systematizing our experience, and because of its appeal to our individual bent of mind, our next step should be to see if we can really rise to the state of the cosmic spirit and realize what the theory maintains. This will at least strengthen our own faith in the theory even though it may not produce that kind of intellectual conviction which universal acceptance of a statement does in science and commonsense. But that is not expected in metaphysics where, because it is a matter of vision and attitudes, we can have alternative metaphysics. The criteria of simplicity and adequacy are not very objective; what may be a gratuitous assumption for one thinker may be a necessary truth for another. A large margin for subjective preferences has to be admitted in our view of metaphysics, and this is in keeping with our metaphysical theory according to which our thoughts and attitudes are but various adopted modes of the cosmic spirit that loves variety.

Indian Poetics

THE purpose of this essay is to introduce Indian poetics to Western readers by way of, first, selecting certain general problems in poetics and finding their treatment in Indian poetics and also indicating some parallels in Western thought, and secondly, noticing certain features peculiar to Indian poetics.

1. GENERAL PROBLEMS IN POETICS AND THEIR TREATMENT IN INDIAN POETICS

A. Definition of literature

(1) The Sanskrit word for literature is *Sahitya*, which etymologically means coordination, balance, concord, and contact. Following one of these several meanings, literature is defined by one school of Indian poetics as the art where the words and sense meet on equal terms and enhance one another's beauty and worth. They are compared by Kuntaka[1] (10th century A.D., Kashmirian) to two close friends, one having powers and virtues equal to the other. This manner of looking at literature and recognizing the value of means, the language, along with the sense expressed, may be significant in our times when most poets and critics, following Mallarme, want the words of poetry to be opaque, beauties in themselves, sound-values that may be allowed to play upon the reader's consciousness. Poetry must not say anything, show anything beyond itself. This is an extreme reaction to emphasis on the sense of a poem at the cost of its language and, so, to the notion that poetry cannot lose much by either paraphrasing or translation.

Now with regard to this sense of poetry another school of thinkers, known as that of suggestion (*dhvani*) headed by Anandabardhan[2] (of Kashmir, 9th century A. D.) and Abhinava

[1] He wrote *Vakrokti Jivita* and defined poetry as indirection in speech (*Vakrokti*).

[2] His famous work is *Dhvanyaloka* (*The Light of Suggestion*) on which Abhinavagupta wrote a commentary known as *Dhvanyaloka-Lochana*. This book, published in the Chowkhamba Series (Banaras, 1940), will be denoted by *DL*.

gupta[3] (Kashmir, 10th century A.D.) points out that it is not the literal, direct, and referential meaning that poetry properly expresses, but it is a suggested, indirect, and emotive meaning, and hence, though the words of a poem must be given their due importance, and the same with regard to the literal sense they denote, yet both the words and their direct meaning form but a medium for the emotive and indirect meaning to express itself. In good poetry this suggested meaning dominates over the words and their literal sense. The latter are compared to a woman's body while the former to her grace or beauty which is a subtler manifestation and a profounder meaning of womanhood.[4] (We may compare with this concept of poetry A. C. Bradley's notion of it as a unity of sound and sense; the latter he calls "resonant meaning" as it is suggested and yet it is not anything apart from the poem itself.)[5]

(2) There is another sense of the word *Sahitya* taken by Abhinavagupta when he describes poetry as an overflowing of some emotion of a poet's heart into the hearts of his readers or hearers. Thus there is a communication of feeling and contact of hearts. In the case of some actual emotion suffered by a human being or an animal, it is conveyed to other hearts by the poet who thus establishes a contact between the suffering being and his readers or listeners through his own self.[6] One may compare with this view Wordsworth's description of poetry as the "spontaneous overflow of powerful feelings."[7]

Now Abhinavagupta speaks also of the unison of hearts of the audience in a play and considers this fact to be essential for

[3] Besides the work mentioned in the above note, he wrote a commentary on Bharata's *Natyasastra* (*Dramaturgy*). The latter is a work of the 1st century A.D. and the commentary is called *Abhinavabharati*. The Gaekwad Oriental Series, Vol. I (1926), Vol. II (1934) will be referred to by *AB*. (*AB* will stand for part I, while *AB II* for part II.)

[4] *DL*, I, 4-5; II, 4.

[5] See his *Oxford Lectures on Poetry* (1909), pp. 13-15, 26.

[6] *DL*, I, 5. Abhinavagupta speaks of the first couplet, written by Valmiki, the author of *Ramayana*. It was on the pain of separation of a female water-fowl from its male partner which was just killed by a hunter, Abhinavagupta says, that the pain of the bird poured into the poet's heart and, overflowing it, spread out in the form of poetry to his readers' hearts.

[7] *Preface to Lyrical Ballads* (1800).

aesthetic delight which is contemplative and universal.[8] We are here reminded of our poet of modern India, Rabindranath Tagore, and also of Tolstoy[9] who spoke of art as freeing us of our separation and isolation from one another. We are particularly reminded of Kant[10] who defined taste as a "faculty of forming an a priori estimate of the communicability of the feelings," and saw that this universal communicability of feelings signifies a social interest for us and supplies a reason why we demand from everyone a feeling for judgment of taste as a moral duty. Kant speaks also of "humanity" and "social interest," signifying a "universal feeling of sympathy" and faculty for the universal communication of one's "inmost self." All this leads up to the concept of a "commonsense." But this social interest in communication is empirical for Kant and it "supervenes," instead of determines, the judgment of taste. So he would perhaps reject the definition of art in terms of sociability.

DeWitt H. Parker defines art as social, depending upon types of objects that may be presented in the experience of anyone or upon the patterns of sense and meanings that are potentially universal. Part of our enjoyment of art depends on our feeling of the sharability of art; the knowledge that others are enjoying it.[11] But we think this is an extra-aesthetic enjoyment and, so, not an essential or defining characteristic of art.

(3) Poetry has been defined in terms of an extraordinary kind of delightful mental state, called *rasa*.[12] This is a state that arises out of the contemplation of emotion evoked by a poem through suggestive means, through the depiction of appropriate characters and situations, and through rhetorical devices. The emotion is then objectified and enjoyed as an ideal content or a generic essence. Now, since suggestion, instead of direct description of emotions, is the mode of expression to be adopted in poetry to produce its proper pleasure or *rasa*, sometimes suggestion (*dhvani*) has been declared to be the soul of poetry.[13]

[8] *AB*, p. 280.
[9] *What is Art*? trans. A Maude (1896), Chap. V.
[10] *The Critique of Aesthetic Judgment*, trans. Meridith (1911).
[11] See "Nature of Art" reprinted in *Problems of Aesthetics* by M. Weitz (N. Y., 1959).
[12] Bharata, *Natyasastra*, 6.34; *DL*, 2, 3; *AB*, 7.1.
[13] *DL*, 1, 5.

Abhinavagupta, however, rightly saw that it was not any and every sort of suggestion that produces poetry proper, but only that sort which yields *rasa* or the characteristic aesthetic delight.[14] Some aestheticians held figures of speech to be the essential mark of poetry, some more generally, indirection of speech, while others held appropriateness in the use of words to be the mark. But the theory of *rasa*, as developed by Abhinavagupta out of the germinal ideas of Bharata and in the light of the theory of suggestion first advanced by Anandabardhan, superseded these earlier notions of poetry and showed that the figures and indirection of speech and appropriateness have for their end the production of *rasa* or aesthetic delight, which therefore, is the supreme mark of poetry.[15]

B. The nature of aesthetic delight

Poetic delight, *rasa*, arises out of our expression and contemplation of some emotion latent in our common human nature through the imaginative watching of certain characters, their thoughts, actions, and physical manifestations of their feelings, and their surroundings, all of which suggest or evoke by association the emotion.[16]

The following characteristics are to be noted :

(1) Poetic enjoyment is at once an emotional exaltation and a state of serenity. It is not a matter of passive emotional indulgence though it concerns emotions primarily and there is some sympathetic participation in the emotion depicted in the poem. It is more an expression and contemplation of the emotion which, so expressed and contemplated, colors or variegates the aesthetic mood, *rasa*, that poetry brings about. The *rasa* is not any emotion but an emotion transfigured into an extraordinary mood.

This mood is characterized by (*a*) intense absorption or density; (*b*) realization of one's consciousness or pure self along with the particular emotion contemplated;[17] (*c*) intense delight of an extraordinary kind, akin to ecstasy of a mystical sort which

[14] *DL*, I, 4-5.
[15] *DL*, II, 5.
[16] *AB*, VI, 34; *DL*, I, 4-5.
[17] *Natyasastra*, 6.35; *DL*, I, 4.

is not variegated with emotion, from an extrasensory introspective knowledge of an emotion available to the yogis, and also from any ordinary discursive knowledge.

We may compare the above with its Western analogues. Aristotle probably meant by *catharsis* of pity and fear in a tragedy purification of the egotistic element of these emotions and the transformation of them into something pure and tranquil, as one of his interpreters, S. H. Butcher, tells us.[18] One may as well say that Aristotle meant by *catharsis* of these tragic emotions a clear contemplative insight into the essential nature of these emotions which, thereafter, cannot overcome the person concerned. The beauty of a thing is, for Aristotle, its appropriate or essential nature and since a tragedy is to reflect a serious and complete action as well as pity and fear, we may say that it reveals to the audience the essential nature or form of life and these emotions.[19] This would bring Aristotle very near Abhinavagupta. But one point of difference between them is that while the Indian thinker, speaking of the origin and nature of aesthetic delight, points to our self-consciousness which is realized in poetic appreciation, Aristotle is thinking either of the relief from blinding passions or a lucid contemplation of them, neither of which mental acts explains the characteristic delight we derive from poetry and drama.

Hegel and Croce spoke of mitigation and objectification of emotions in aesthetic enjoyment,[20] but minimized the element of sympathetic participation in the emotions; they made aesthetic appreciation much like an intellectual process. I. A. Richards stresses the emotional exaltation we have in poetry. Though he speaks of the balance and organization of emotions which lead to a tragic repose, he is no formalist and intellectualist in aesthetics and, certainly, he has no faith in the transcension of emotions in aesthetic enjoyment.[21]

(2) The contemplative enjoyment of an emotion is made possible by the depiction in language (in the case of poetry) and

[18] See his *Aristotle's Theory of Poetry and Fine Art* (1931), pp. 254-268.

[19] See the author's "Catharsis in the Light of Indian Aesthetics," *JAAC*, XV (Dec. 1956), 215-226.

[20] See Hegel, *op. cit.*, "Introduction"; Croce, *Aesthetics*, trans. Ainslie (1901), Chap. II.

[21] See his *Principles of Literary Criticism* (1930), pp. 51, 59, 98, 132, 246.

dramatic representation (in dramatic performances) of characters and their physical manifestations of feelings and their surroundings which suggest the emotions. The rhetorical means used in poetry also suggest emotions which must not be described.[22]

(3) One general condition for the poetic enjoyment is "universalization" of the objects depicted in the poem, the objects being characters, their actions, and their surroundings as well as the emotions suggested by them; the mind of the poet and the minds of the reader too undergo a process of universalization to be explained below. The process involves the following :[23]

(*a*) Regarding the objects : they are depicted in their generality as generic essences or ideal contents, not as actual and concrete things which arouse specific intellectual and practical responses.

(*b*) Regarding the mind of the poet : all self-interest or eccentricity or individual predilection are shed away; the mind gets disinterested, yet not indifferent to objects, rather it is absorbed in them. Consciousness in aesthetic contemplation becomes socialized. (Compare Keats's "negative capability,"[24] Hegel's theory of the effacement of all idiosyncrasy,[25] and T. S. Eliot's use of the term "impersonality."[26])

(*c*) Regarding the readers : the mind of the poet in the generalized state is identified with the able reader who, by virtue of his sympathetic imagination receives the aesthetic consciousness, *rasa*, that is born in the mind of the poet.[27] The reader must be sympathetic and feel at one with the author,[28] his mind should be like a polished mirror that can reflect the universally communicable objects depicted by the poet,[29] yet his sympathy must be disinterested in so far as he will treat every object as ideal (and not actual). For this attitude to develop, he must have a

[22] See Mammata (11th c. A.D.), *Kavyaprakasa*, VIII, 60-62. Also Alexander Smith, "The Philosophy of Poetry," *Blackwood's Edinburgh Magazine* (1835), p. 528.

[23] AB, pp. 280-281, 293, 346, *DL*, p. 86. The process of universalization is called in Sanskrit, *Sadharanikarana*.

[24] Letter to George and Georgiana Keats, 28 Dec., 1817, and to Woodhouse, 27 Oct., 1817 (B. Forman Edition, 1931).

[25] *Op. cit.*, p. 396.

[26] *Tradition and Individual Talent* (1932).

[27] *AB*, p. 295.

[28] *AB*, II, p. 339.

[29] *DL*, p. 38.

previous training in poetic appreciation, and the author should help him by providing such elements in drama as spectacles, costumes, fine music, and dance, which tend to make him forget his private obsessions and attitudes. In poetry the poet provides rhyme, meter, and figures of speech to help this process of universalization.[30]

We may compare this view with Edward Bullough's notion of "psychical distance,"[31] which means an interest in the objects and emotions depicted in the poem such that it is "filtered", "cleared of its practical, concrete nature of appeal." Thus the objects and the emotions are objectified and thus do not excite feelings. Bullough, however, does not bring out the logical implication of this psychical distancing, which, if he did, might lead him to the Indian concept of universalization.

(4) Metaphysical implications of the theory of *rasa* :

(*a*) Two grades of consciousness or personality are presupposed by the theory of *rasa* : (1) individual and practical, and (2) universal and contemplative yet sensitive to all things and enjoying them aesthetically. This is *Saiva-siddhanta* metaphysics. [For *Vedanta* the higher self (in the liberated state in life) is indifferent, while for Sankhya, neither joy nor sorrow of whatever sort is a quality of consciousness which is pure intelligence] Aesthetic experience is different from that of the mystics and yogis, it is called the twin of the taste of the Divine, not identical with it.[32] It is more tender and variegated, not dry and undifferentiated.[33]

(*b*) The second implication is the subsistence of emotions, like pity, fear, love, etc., depicted in poetry and drama, as ideal contents or universal essences, dislodged at once from the individual minds that ordinarily suffer them, and from things which they appear to characterize, floating in a world of their own. As such they are objects of aesthetic contemplation and delight.

[30] *AB*, pp. 281-282.

[31] See his paper, "Psychical Distance as a Factor in Art and Aesthetic Principle", in *British Journal of Psychology*, V (1912), 87-98. Also reprinted in *Problems of Aesthetics*, *op. cit.*. See also the author's paper, "Psychical Distance in Indian Aesthetics," in *JAAC*, VII (Dec. 1948), 138-140.

[32] *DL*, p. 190.

[33] *AB*, pp. 286, 291; *DL*, pp. 51, 81.

Compare Meinong's view of the subsistence of emotions and abstract entities. Philip Leon too holds emotions in art to be objects apprehended and not feeling projected on the external world.[34] The empathy theory of Lipps and Volkelt speaks of our feeling into outer things or externalizing our feelings, but Philip Leon criticizes this subjectivist theory and is nearer the *rasa* theory.

(*c*) The third implication is the disposition in man for some basic emotions depicted in art, a disposition being the result of our experiences in innumerable past lives in varied modes, which experiences leave their traces in our consciousness. The presence of this disposition explains why every one of us can appreciate the basic emotions depicted in art though everyone may not have experienced these emotions in this life. Communication of emotions means the eliciting of latent emotions in the reader's or beholder's mind.[35]

C. The value of Poetry : Poetry and Morality

(1) Poetry is valuable in itself. It is for the relish of one's own consciousness of a particular grade along with the emotions contemplated.

(2) No moral question is raised when every emotion such as infatuation, hideousness, envy, cruelty, intoxication, deceitfulness are enumerated and described in treatises on poetics and admitted with other emotions as fit objects for depiction in poetry and drama. No rule like that of poetic justice is prescribed. The erotic emotion is described as the best for poetry because of its more universal and richer appeal.

(3) Abhinavagupta clearly points out that poetry does not instruct like moral, religious, and historical works, it gives us delight and it instructs only in the sense that it enriches our aesthetic sensibility.[36]

The *Aitareya Upanishad* says, "The works of art spring from the refinement of the self and the devotee of the arts refines his self by them." We can speak of the arts helping one to be

[34] See his "Suggestion from Aesthetics for Metaphysics of Quality," *Mind*, N.S. 129.

[35] *AB*, pp. 284-285, 281; *DL*, p. 187.

[36] *DL*, pp. 40, 190, 336.

more inward-looking and more aware of emotions which then can overpower one less. The arts may also indirectly teach one to regard the world dispassionately as a passing show. This is our view of the functions of art; the world itself including our life with its joys and sorrows may be regarded as a piece of art to be enjoyed with a disinterested and contemplative attitude of mind.

We may compare such views with Aristotle's notion of poetry which is quite amoral. In his view pity and fear, and other emotions that may shock a moralist, may be depicted; only purposeless depiction of immorality is disapproved. Yet he may be thinking of a socio-moral value of tragedy when he spoke of *catharsis*, which may be interpreted as a process leading us to a knowledge of the tragic emotions, teaching us indirectly how to feel them properly on appropriate occasions in right measure.[37] Kant made art autonomous and non-moral, nevertheless, he spoke of art as being a symbol of morality and found in this moral feeling the basis of the universality and necessity of aesthetic judgment.[38] For the sake of contrast we may mention Tolstoy[39] who recommended for art the simple feelings of the common man and also religious feelings and denounced spleen, pride, voluptuousness, etc., for they belong exclusively to the idle rich. Tagore[40], too, disapproves of low passions being depicted in art, for he holds that art should reveal the truth about mankind, and this truth lies in what man aspires to be, not in what man at the moment actually is. Man will overcome in time his lower passions, pass them for his nobler ones.

II. SOME SPECIAL FEATURES IN INDIAN POETICS

A. The theory of suggestion

That poetry works by suggestion has been noted by Shelley, A. C. Bradley, and I. A. Richards but the Indian aestheticians have studied at length the way this suggestion works. The words and sentences of a poem have a referential or direct meaning through which the emotive meaning expresses itself and over-

[37] See Humphrey House, *Aristotle's Poetics* (1956), pp. 104-110.
[38] *Critique of Aesthetic Judgement, op. cit.*, pp. 223-227.
[39] *What is Art ?, op. cit.*, Chap. 16.
[40] *Sahityer Pathe* (1343 B.S.), p. 173.

shadows the former.[41] Good poetry does not influence us emotionally like music that does not say anything. It presents a referential meaning as well as an emotive attitude emanating from the latter with sufficient uniformity and distinctness (of course, only for a cultural group that has an adequate knowledge of the language and experiences of life) so that the emotive attitudes thus suggested or evoked may be called emotive meanings. There is another way of suggesting the emotive meanings; in this the rhetorical constructions of words and sentences, instead of describing certain characters, their behaviour and surroundings, suggest certain emotions.

The excellence of a poem is judged by the richness of suggestion employed in it to express a dominant emotional attitude. Thus, for instance, consider the two quotations from Shakespeare :

"But look, the morn is russet mantle clad
Walks over the dew of yon high eastern hill."

"Unarm Eros, our long days task is done,
And we are for the dark."

In the first the suggested emotion is subordinate to the descriptive meaning which is but embellished by it, but in the second the suggested emotion dominates the descriptive meaning that suggests it. So the second is a better poetical piece. In a long poem there may be more complex emotive meaning,[42] which will be suggested by many meanings subordinate to it, *e.g.*, in a Shakespearean tragedy the chief complex meaning may be said to be "sadness, mystery, and waste" (as A. C. Bradley points out)[43] which is rung out of many subordinate notes. This leads us to the question of differentiation between two kinds of emotions depicted in poetry, one that usually dominates and others that suggest and sustain it as auxiliaries

B. Permanent and transitory emotions

Emotions awakened in poetry are of two classes : one class dominates a poem while the others are transient and are subservient to them.[44] Thus the pervading emotion or the prevailing mood in a poem, such as *Romeo and Juliet*, may be love which is

[41] *DL*, III, 42-53.
[42] *DL*, III, 1-2.
[43] *Shakespearean Tragedy* (1903), p. 23.
[44] *Natyasastra, op. cit.*, 7, 11-17, 43; *AB*, pp. 283-285.

served by such transitory emotions as longing, rashness, anxiety, sadness, joy, self-pity, stupefaction, etc., which suggest and sustain the chief emotion. Fear, indolence, cruelty, and disgust are said by Bharata, the Father of Indian poetics, to be incompatible with love. There should be only one principal emotion in a composition; others should be subservient to it.

Now the emotions that may be employed to strike the dominant note of a poem are the more elemental, powerful, and pervasive in human nature, such as love, pity, fear, and wonder. Each of these manifests itself through a number of less elemental and powerful emotions which appear and disappear in quick succession in the poem. The question then is, how many emotions are there which function as permanent ones in poetry and drama and whether the number is flexible or fixed; further, whether an emotion like weariness, anxiety, or envy which is indicated as a subordinate one, may be made to function as a permanent one in a poem. Abhinavagupta is very rigid in these matters : he enumerates nine emotions that can function as permanent ones and does not admit any others. He lays down that only these, when depicted by appropriate suggestive means and through their proper auxiliary emotions, can produce *rasa* or aesthetic delight.[45]

But later aestheticians added some other emotions to the list of permanent ones. So that though there is some difference in actual classification of emotions into two classes, the general principle is admitted that in a poem one emotion should dominate over others that will serve it and that some emotions are naturally more suited to function as dominant ones while others function as auxiliaries. That such a classification has a basis in actual poetical works as well as in human psychology seems to be pretty clear, though Western critics have not explicitly marked this aspect of poetics. Aristotle speaks of the depiction of character by which he means permanent disposition, through thoughts, action, and feelings. We may here guess that Aristotle might be implicitly thinking that the feelings, which are naturally transitory in a play, serve to manifest and sustain the more permanent emotional mood that characterizes the disposition or character of the hero or the heroine.

[45] *AB*, 7.2.

Catharsis in the Light of Indian Aesthetics

THE concept of Catharsis in Western aesthetics arose out of speculations on Aristotle's remark in his *Poetics* that in a tragedy there should be, among other things, "incidents arousing pity and fear; wherewith to accomplish its catharsis of such emotions."[1] The word "catharsis" was used in his times in a therapeutic sense of purgation and also in a religious one of purification, but it appears from the use Aristotle made of it, of course, metaphorically, in *Poetics* and elsewhere[2] that he meant by it purgation.[3] Tragedy, then, by rousing these emotions in the mind of the audience purges the latter of them. And since they were considered to be unwholesome either in themselves or because they tended to be present in excess (and all excess is bad), tragedy in purging them exercises a kind of psycho-therapic action on the audience. This is the kind of interpretation of catharsis given by such eminent thinkers as Milton,[4] Butcher,[5] Bosanquet,[6] Gomperz,[7], L. Abercrombie[8] and F. L. Lucas.[9] Now Aristotle, if he means this sort of thing by catharsis, does not give us a convincing theory of the function of tragedy. For supposing we share his view regarding emotions of pity and fear that they, as our dispositions, should be kept to

[1] Bywater's translation: *Aristotle on the Art of Poetry.* (1920), p. 35.

[2] *Politics* (1342 a).

[3] This is also the view of Lascelles Abercrombie. See *The Principles of Literary Criticism* (1930), p. 107.

[4] See his preface to *Samson Agonistes* where he advised that "to temper and reduce pity and fear to just measure." Similar passions "should be stirred up by reading or seeing those passions well imitated," for, he says, "in Physic things of melancholic hue and quality are used against melancholy, sour against sour, salt to remove salt humours."

[5] S. H. Butcher: *Aristotle's Theory of Poetry and Fine Arts* (1931), Ch. VI. He writes, "In each case, the method of cure is the same, an external agitation is employed to calm and counteract an internal."

[6] See his *History of Aesthetic* (1922), p. 65.

[7] See his *Greek Thinkers* (1901-5) Vol. 5, p. 406.

[8] *Loc. cit.* "Aristotle regarded the function of Tragedy as something medical: the pity and fear of tragedy were the doses by which the tragic poet homeopathically purged his audience into emotional health."

[9] See his *Tragedy in Relation to Aristotle's Poetics* (1927), Chap. II.

a minimum for health, we do not see how tragedy helps us in this direction. Tragedy, we feel, instead of reducing one's dispositions, to feel these emotions, augments it. In fact Plato charges the tragic poet for making men sentimental and, so, unmanly.[10] Then we see that men do not go to the theater with emotions pent-up in their hearts to get relieved of them, rather they are affected with emotions there. So that if tragedy cures them then it cures a disease which it itself causes. Now supposing that a person sometimes has an accumulation of pent-up emotions of pity and terror in his soul, we may grant that tragedy helps him to release his emotional burden and, so, affords him a pleasurable relief. But this is just a temporary relief and no permanent cure of his emotional disposition. Rather we see that actual situations in life, in rousing a certain emotion, usually weaken the disposition for it by their frequency; the mind becoming less sensitive to the emotion often undergone in life. The opposite happens in the case of emotions enjoyed in tragedy. The theater-goer develops a taste for and sensitivity toward the emotions depicted on the stage. So that what may have started as just a useful means of relief from an emotional burden gathered up naturally in the mind, may end as a stimulant for the same thing, and, because of this virtue, a charming addiction. The theater-goer is thus caught in a vicious circle, like one given to drinking. Wine stimulates the body and mind but produces as an after-effect a depression which calls for wine again, and, so, one tends to increase the dosage. What starts as a slave ends as a master. Thus the weakness of the theory that tragedy is a curative of tragic emotions of pity and fear is manifest.

It may be argued that the cure is effected in a different manner. It is not a homeopathic cure of pity and fear by their like, but an allopathic one, by opposites, and this is what Aristotle too must have meant, for this was the Hippocratic principle of cure followed in his time.[11] So that catharsis is effected in tragedy through a mutual mitigation of tragic emotions, pity

[10] See *Republic* Book X, 605-7.

[11] See Hippocrates: *Ancient Medicine* (Loeb's Classical Library), Chs. XIII and XVI. The physician is advised to cure hot by cold, cold by hot, moist by dry and dry by moist. Galen also continued the same principle of cure. See his *On the Natural Faculties* (Loeb's). (II, 9, 127-28).

and fear which are opposites. But we consider this view of catharsis to be neither acceptable nor what Aristotle may have meant. Though it may be in keeping with the medical theory of cure which he most probably held along with his contemporaries, it does not fit in with his view of tragic effect which is one of emotional exaltation rather than of quiescence. The "proper pleasure"[12] of tragedy arises out of a concentrated dose of the tragic emotions which, it seems, reinforce each other instead of cancelling. It is only a weak audience that wants some kind of mitigation of the emotional intensity proper to tragedy.[13] If pity and fear neutralized one another in tragedy like, say, laughter and sympathy, there would be bathos in place of pathos and at least Aristotle would not call it a tragedy. We know the sort of tragedies that Aristotle had before his mind while he wrote *Poetics*. Indian aestheticians forbid the co-location of such opposite emotions in a drama that cancel one another in effect.[14] But apart from this, there is the important point that pity and fear, which are for Aristotle the tragic emotions, are not so opposite as to cancel one another. Aristotle too does not consider them as opposites.[15] So that catharsis, considered after the analogy of allopathic cure, does not accord with other things Aristotle said about tragedy and, so, is not what he might have accepted. Nor does it accord with facts and so is unacceptable to us. One's dispositions for pity and fear may be imagined to be somehow checked by one's experience of mutual cancellation of these passions, but tragedy cannot be said to afford this curative experience. Tragedy seeks to depict, instead of mutual cancellation of emotions of opposite qualities —which it avoids, mutual reinforcement of like or concordant emotions and resolution of unlike or discordant ones, both conditions leading to a heightening of emotional effect. Thus tragedy, instead of mitigating the emotions, piles one upon an-

[12] Bywater, *op. cit.*, pp 52, 79, 95.

[13] *Ibid.*, pp. 51-52. "It belongs rather to comedy, where the bitterest enemies in a piece walk off good friends at the end, with no slaying of any one by any one." The Greek tragedies Aristotle had in his mind and which he alludes to in his *Poetics* to illustrate his several points are all highly emotional, full of blood and tears.

[14] See, e.g., Mammata: *Kavyaprakasa* (11th c. A.D.), VII, 63-65.

[15] See *Rhetoric* (1386 b) and (1383 a) where he says that the proper antithesis of pity is indignation while that of fear is boldness.

other to build up a rich and vigorous emotional mood that dominates the play and functions as its ultimate meaning. Something of this nature is described by Richards as the essence of tragic effect.[16]

Now one might argue that this aspect of tragedy can yield us a meaning of catharsis, again in a therapeutic sense, and so, possibly acceptable to Aristotle. Pity and fear do not cancel one another in tragedy but they fuse into a finer and richer emotion by the tragic intensity so that the audience learns to sublimate them in its nature. But this is not an adequate view though Aristotle might be pleased to hear of it. For tragedy, according to this view, can cure only pity and fear, but not emotionalism. Plato's charge against tragedy that it weakens the rational side of our nature by encouraging the sentimental one is not fully met by this theory. It may, however, be said in favour of this theory that the dominant emotional attitude struck up by tragedy has an aspect of balance and harmony which produces by virtue of its form a repose in the midst of tumult.[17] But still this is not enough of an answer to the original charge. One can readily see that the diverse emotions depicted in a play combine only to heighten the total emotional effect, so the richer is the organizational or formal element involved in the combining process, the intenser will be the final effect. Emotional intensity will mount up, and the repose due to contemplation of the formal element cannot be a match for it.

We conclude from above that any account of catharsis given on the line of allopathic principle of therapy falls short of its objective which is the cure of emotional disposition. The homeopathic account too, we saw, failed. The essential function of a tragedy is not a cure of emotion whether it be imagined to be effected by its like or unlike. It is not a cure in the ordi-

[16] I. A. Richards: *Principles of Literary Criticism* (1930), pp. 245-46. "What clearer instance of the balance or reconciliation of opposite and discordant qualities can be found than Tragedy. Pity, the impulse to approach and Terror, the impulse to retreat, are brought in Tragedy to a reconciliation, ... Their union in an ordered single response is the catharsis by which Tragedy is recognized, whether Aristotle meant anything of this kind or not." Richards says that art evokes emotional attitudes and its greatness is directly proportional to the number and extent of emotional attitudes and their internal organization. (*Loc. cit.*)

[17] Richards also speaks of this repose produced by the balance and reconciliation of feelings. (*Loc. cit.*)

nary sense in which one understands the term and we used it in the above discussion. For we found that tragedy offers us an emotional attitude of great intensity and richness. The dominant emotional note struck up by a good tragic piece contains many auxiliary minor notes which combine to produce it; an emotion of high amplitude and quality. Examples of such dominant notes may be found in Greek tragedies where pity, fear and a sense of mysterious fatality fuse into one pervading emotion without name, or again in Shakespeare tragedies where, as A. C. Bradley points out, the predominant note is that of "sadness, mystery and waste."[18]

So catharsis cannot mean for us a cure of tragic emotions in the ordinary sense. It appears as if the therapeutic sense of the term has to be altogether sacrificed. Yet this would empty Aristotle's observation in *Poetics* about the function of tragedy of all meaning and, then, on our part too, we cannot see what sense and defence we can make of tragedy if it does not have any beneficial action on the audience. As to the first difficulty we can very well imagine that Aristotle used the medical term "catharsis," to specify the characteristic function of tragedy, in a metaphorical sense, investing it with a new meaning,[19] yet retaining some of the old meaning of the term as it is usual in such a case. The reaction of the tragedy on the mind must have appeared to Aristotle to be analogous to the cathartic effect of certain medicines on the body. The observation in *Politics*[20] that enthusiastic music soothes the mind of a person suffering from an excess of enthusiasm and works a kind of catharsis is also to the point. As to our difficulty of specifying the function of tragedy, apart from the speculation about what might have been Aristotle's solution of it, we can recognize the awkward situation that if we do not indicate any beneficial action of tragedy on the audience we virtually condemn it and all our fine analysis of this type of art is sheer waste of time and mental energy. And if we admit some beneficial action of tragedy how can we describe it but on the analogy of medicinal cure and toning ?

[18] *Shakespearean Tragedy* (1905), p. 23.

[19] As Gilbert Murray says in his preface to Bywater's translation of *Poetics* (*op. cit.*, p. 16).

[20] *Politics*, 1342 A.

So that the therapeutic significance of catharsis must be somehow retained. But how ? It is here that the traditional Indian aesthetical theory of *rasa* can help us. This will help us to tide over both the difficulties mentioned above, namely, the historical one of settling what Aristotle might have meant by *catharsis*, and the philosophical one of finding for ourselves what human good tragedy can possibly effect. As to the first suggestion we can say, very generally, that the solution offered by classical Indian aestheticians would be acceptable to Aristotle. For the solution, as we shall presently see, rests on two points, one an intellectualistic attitude towards emotions, seeking to purify them of the passivity and blindness attached to them as they affect us in life, another the principle of suggestion which is indicated as the secret of this kind of purification that emotions undergo in drama. And while Aristotle manifestly shared the particular view of emotions, he was not unaware of the cause of transformation in tragedy of raw emotions into something fine and serene. This we shall see at the end of the essay. With regard to the second task, mentioned above, of determining for ourselves the specific influence of tragedy on humanity, we may simply observe that we wholly subscribe to the answer given to the question by Indian aesthetics. We believe that the essential insight of the ancients holds good even today, the two thousand years of thought on the subject, especially that taken by the modern psychologists, have not disproved this essential insight but have only proved its worth. We will, however, not endeavor to demonstrate this here.

Turning to the Indian speculation on the subject, then, the first thing that strikes us is the influence upon it of the traditional medicinal theory of Charaka and Susruta.[21] Bharata,[22] the father of Indian aesthetics, whose work *Natyashastra* (Dramaturgy) was taken as the only authoritative text on the subject by others, uses many key-terms to describe the characteristic tragic effects that are found in the works of these medical authorities. It is natural to suppose that Bharata, like Aristotle,

[21] They are generally known to belong to 1st c. A.D. too. The science of medicine and surgery which they founded had its sources in much earlier works and cumulative experience of the people.

[22] Who most probably lived in 1st century A.D.

used these terms metaphorically, and so, investing them with new meaning yet retained something of the old Now the key-term used by Bharata, and following him all the rest of Indian aestheticians, to describe the character of tragic effect is *rasa* and this is originally a physiological term and figures in the medicinal literature (called *ayurveda*) of India. It means the physical quality of taste and also any one of these six tastes, *viz.*, sweet, acid, salt, bitter, astringent and insipid. These six kinds of tastes severally characterize the six bodily humors which are known by their tastes.[23] All this is found in Hippocrates also who enumerates those very six physical qualities of taste (Greek *reos*) as characterizing six bodily humors.[24] Bharata also follows this in his dramaturgy where he defines *rasa* by the quality of taste, as it is done in the medical literature of his time, using the same word used therein.[25] Bharata also says at first that there are six *rasas* or principal emotions in a drama, but later that there are eight.[26] Now when the medical ideas of his time influenced him so much, it is safe to surmise that the idea of cure will color his view of the function of tragedy.[27] Then Bharata could not, and he did not, as many of his terms show, pass by the Yoga of Patanjali which was no less a cultural

[23] See, e.g., *Charaka-Sanghita, Sutra-Sthanam,* 26.12, and *Susruta-Sanghita, Sutra-Sthanam,* 14.2. I am indebted to Mr. R. K. Sen's brochure *A Comparative Study of Greek and Indian Poetics and Aesthetics* (Calcutta, 1954), for this and some other information about Greek and Indian medical theories. His thesis is that both Bharata and Aristotle meant by tragic function a simple allopathic cure of emotions by their opposites, e.g., pity and fear cancelling one another. This we have discussed and summarily rejected. Mr. Sen relies too much on the medical analogy and cares too little for the concrete aesthetic situation. We have here shown how the medical analogy works in a subtle and tenuous manner. There is some sort of mental cure and toning up effected by tragedy but the principle of cure, either homeopathic or allopathic, has little significance here. Perhaps the homeopathic principle applies a little in the case of balance and harmony produced on the mind by the similar qualities found in drama, but, as we have shown, this is not the essential curative effect of drama and it contributes but a small part to the tragic repose. But Prof. Sen does not refer to this element in dramatic effect.

[24] *Ancient Medicine,* Chs. XIV and XVIII.

[25] *Natyashastra,* 6.31; *Charaka-Sanhita,* S.S. (1.33); *Susruta-Sanhita,* S.S. (42.3).

[26] Bharata, *op. cit.,* 6.31 and 6.38.

[27] However, like Aristotle, Bharata too does not seem to make any use in aesthetics of the specific theory of cure which ruled Indian medicine. This was the allopathic principle of opposites. See *Charaka, op. cit.,* S.S. 1.30-31.

influence of the time than the medical science, and this taught men how to purify the mind of all disquietude and bring it back to its inherent state of freedom and bliss. As a result of these two influences upon him, one a science of cure of the body and another of the mind, we find in Bharata and, so, in Indian aesthetics in general which he fathered, the concept of tragic effect as a sort of cure and a tonic for the mind. The medical analogy plays a definite though subtle role in the theory of *rasa* or aesthetic delight first formulated by Bharata and developed by his followers, chiefly Abhinavagupta.[28]

Bharata lays down the principle of generation of *rasa* or aesthetic delight in drama thus : *rasa* is nothing but the relish of a principal or elemental human emotion, like love, pity, fear, heroism and mystery, which forms the pervasive dominant note of a dramatic piece. This taste of the dominant emotion is made available by means of a number of minor and transitory emotions depicted in the piece by means of representations of characters, their physical manifestations of feelings and their surroundings or background.[29] Now as interpreted by Abhinavagupta,[30] *rasa* is at once an emotional exaltation and a state of serenity. For such an emotion resides in the mind of the audience as a powerful and permanent disposition and is brought out or manifested by the play in a peculiar manner. The emotion is stirred up by certain other emotions which serve as accessories to it and which, though less elemental or powerful in human nature than the latter and much less enduring in the play, support this principal emotion which dominates the atmosphere of the play as a steady and pervading atmosphere. Thus, for instance, the emotion of love that dominates the atmosphere of *Romeo and Juliet* does so through the auxiliary and transient emotions, like longing, rashness, anxiety, sadness, joy, self-pity, stupefaction and bewilderment, suggesting and sustaining the chief

[28] Who lived in the 10th century A.D. and wrote *Abhinavabharati*, a commentary on Bharata's *Natyashastra*. His other work on aesthetics is a commentary on Anandabardhan's *Dhvanyaloka*, the latter (9th century A.D.) dealing with the theory of suggestion in poetry and drama. It is called *Dhanyaloka-lochana*. We shall refer to these works of Abhinavagupta by A. B. and D. L. respectively.

[29] Bharata, *op. cit.*, 6.31-33. He mentions some eight dominant emotions corresponding to eight kinds of *rasa* they give rise to when they are tasted in drama.

[30] See A. B. (*op. cit.*) VI, 34. and D. L. (*op. cit.*) 1.4-5. Also see *Kavyaprakasa* (*op. cit.*), 4.28, where the view of Abhinavagupta on *rasa* is ably summarized.

emotion.[31] Now the chief emotion, as thus awakened in the mind of the audience, has a different quality or flavor from that aroused in life. Here the emotion is brought out by suggestion and resides in an ideal plane as forms or essences of their specific contents or instances in actuality. The ordinary emotion (*bhava*) is said to be transformed into an extraordinary mood (*rasa*) which is but aesthetic delight embodied in the particular emotion or, viewed in a different manner, it is but the original emotion transfigured by aesthetic delight. The change that is brought about in the emotion, as it is ordinarily undergone in life, by dramatic presentation of it, is that the emotion is not felt as a personal psychical affectation but an inter-personal ideal object of contemplation.

We may understand this distinction made by Abhinavagupta and others between an emotion as an ordinary psychical content (*bhava*) and as an extraordinary object of aesthetic contemplation (*rasa*) by the analogous distinction made in logic between an idea as a psychical content and as an ideal one. Idea as a psychical content or as it is actually represented by some image in the mind functions as a symbol meaning the idea or thought which has a logical being.[32] When we think of a chair we have an image of it which is derived from our previous perception of different chairs on different occasions, but this image is found charged with meaning. The image is particular, changing with time for a particular person and differing with different persons, but the thought of the chair is an identical reference beyond this subjective occurrence. The emotions actually suffered in life may be compared to images that sometimes float in the mind without meaning anything as it happens when we do not think but merely entertain images. We do not know then *what* we are imaging, but may later remember them and then interpret them as meaning such and such objects. But we did not mean anything then. Emotions suffered in

[31] Bharata says that the dominant emotion is like a king while the minor ones are his attendants (N.S. 7.7) and he describes the kinds of representations appropriate for depicting love. Fear, indolence, cruelty and disgust should *not* function as auxiliaries to love. That there should be only one principal emotional mood in a play and the rest should be subservient to it is important. See, e.g., D. L. 3.21.

[32] See, e.g., F. H. Bradley, *Principles of Logic* (1883), Ch. I. Bradley has not made any distinction between a sign and symbol here. We have also not made any.

actuality may also be compared to sensations without interpretations put upon them by thought which transforms them into percepts. In some absent-minded state of our mind we merely look at something without knowing what we are looking at, that is we look but do not see anything. We may later remember the sensations and *then* know what we were looking at. But, again, this knowledge is the result of an after-thought.

Emotions, then, as suffered in life, are like uninterpreted images and sensations, uninformed by thought. They are, therefore, blindly and passively undergone. But as enjoyed in drama they are contemplated upon and their meanings are revealed to the mind which, therefore, while experiencing them in a way, escapes them in a significant sense. The audience undergoes the emotions depicted on the stage *in a way*, they weep and laugh as they do in life, but these they feel not as real but symbolical, charged with meanings. This is the secret of aesthetic delight. The secret is the intellectual operation involved in aesthetic experience where the emotions are evoked in the mind through suggestion.[33] The mind concerns itself with the intelligible essence or meaning of the emotion. For this is alone the object intended or meaning signified by drama where everything that figures,—the characters, their speeches, actions and other physical manifestations like smiles and tears, and their background—is representative and symbolical in nature, referring beyond them to some meaning which is necessarily some generic essence.

This aspect of the matter is significant and has been discussed in Indian aesthetics where it is called "the generalizing process" in artistic representation.[34] The representations in drama are all particulars in one sense yet general in another and more important sense. They are signs representing certain general objects. Thus a tree on the stage is just an image of a tree standing for any one of the class of trees. And so is a character, say a young lady sitting under the tree, and so are her tears. They are all essentially ideal and not real. They are merely particular and real for one who is not aware that what is going on before him is a play. A little child may have

[33] It is a serious fault to name an emotion in drama, that is to express it directly instead of suggesting. *Kavyaprakasa* VII, 60-62.

[34] See A. B. 6.34. 28. *Kavyaprakasa* IV, 28. It is called *Sadharanikarana.*

this view and we can also deliberately choose to adopt it for a while. However, we usually approach good drama with a proper contemplative mood. To help this and to check naturalistic tendencies, drama employs certain means, such as frequent orchestral music, particularly before the opening scene, gorgeous stage decorations and rich make-up and dress. These are aids to "psychical distancing" which is a necessary condition of artistic appreciation and joy and Indian aesthetics recognizes this fully.[35] So we see that the representations in drama stand for general meanings which are more or less identical for all. Now the emotions these generalized meanings will suggest, by virtue of their association with the latter in the mind,[36] are naturally generalized and ideal (as against particular and real) ones. So is the dominant emotion called up and sustained by them. The emotions evoked in a play are de-individuated, dislodged at once from the specific objects they characterize in reality (and by which they are roused in life) and from the particular subjects who suffer them. They are apprehended in the aesthetic attitude in an impersonal manner as logical entities are done in the cognitive one, and the question of their abode and of their relation to the particulrar minds on the one hand and the objects on the other is for the metaphysician to tackle. We, as aestheticians may only note how feelings and emotions can be contemplated as generic essences and, how therefore, they can serve to delight and unify the audience that in enjoying them enjoys but its own spontaneity of consciousness and the essential sameness of the latter in all persons. Drama thus liberates man from the passivity of blind feelings and also from his self-isolation and gives him a taste of his essential self that is active and lucid in knowledge and is social.

An aspect of dramatic effect may now be brought out. As has been already alluded to before, there is an element of organization of the minor and transitory emotions that strike up one principal emotion, rich and intense, which dominates the drama. Richards seizes upon this aspect of the tragedy and accounts for tragic repose in terms of it.[37] We have to mark

[35] See, e.g., A. B. 6.34.

[36] This association is the result of experience where the particular instances of the general objects represented in the play are found to arouse particular emotions.

[37] Richards, *op. cit.*, pp. 245.-6. See note, 16 above.

two kinds of combination of emotions in a play. One is the mutual reinforcement of like emotions, for instance, those of longing, anxiety, despair and lassitude combining to suggest separated love. Another is the resolution of two apparently unlike emotions into one, for instance, of pity and terror as in a Greek tragedy, into a higher one for which we have no name. Again the resolution of infatuation and disgust or of tenderness and rage into some highly complex and intense kind of love may be cited. Certain devices are mentioned in Indian aesthetics for resolving two contrary emotions which otherwise produce bathos.[38] We know how effectively Shakespeare resolved tragic emotions with comic ones to produce an emotional quality of a higher order. The grave-digger's scene in *Hamlet* or the Clown-scene in *Antony and Cleopatra* is not a mere comic relief; it heightens the tragic effect. Now we may note that besides these two kinds of combination operating in the sphere of emotions there are also combinations of incidents and characters all contributing directly or indirectly to the evocation of the chief emotion of the piece. There is thus a fine organization and also adjustment of means to ends which elements work upon the mind of the audience producing therein an amount of balance and repose.

Now we may collect the threads of our discussion and hasten to our conclusion. Catharsis may have a very general and tenuous therapeutic sense in aesthetics meaning the balance and purification of the mind. We have found that the ruling idea of illness and cure current in the traditional Greek and Indian medicine as well as in Yoga may have some application in understanding of the tragic effect in particular. We have just seen that drama may produce balance and harmony in one's mind by virtue of these qualities being present in it. But more important is the fact that a good drama, while evoking a certain emotion, elemental in human nature, through certain other less elemental ones that appear and disappear in quick succession in the drama to awaken and sustain the chief one, affords a lucid insight into the latter. There is a consequent serenity characteristic of contemplative enjoyment of an intelligible object. The generic essence of the emotion is realized while what is undergone functions as a symbol, at once actual and

[38] E.g., Mammata, *op. cit.*, VII, 63-65.

ideal, like a spoken word or an image that intends an object. This happens because the dramatic representations themselves have a dual nature, they are specific and actual yet representative of generic and ideal objects which they mean. The audience concentrates on these meanings, and, so, following the suggestions of the drama realizes the emotions in their generic intelligible aspect. This predominantly intellectual and impersonal attitude is helped by certain external factors of drama like music and decorations.

We may now add two points to bring out the full significance of the above findings. First, the contemplative attitude in art has a certain resemblance to the intellectual apprehension in science and philosophy. In both there is impersonality or freedom from involvement in the object contemplated and seized while the opposite quality characterizes a feeling and doing. Yet there is some difference between them. For while the object contemplated in art, some principal emotion in its generic form, is realized as a self-contained and self-subsistent one, and so, the mind rests on it, the object apprehended in purely theoretic disciplines is ever referring beyond itself to other objects to which it has to be related in thought in order to know it fully. The ratiocinative or discursive mind does not come to any rest anywhere, but is involved in an infinite regress. It is roving, so the characteristic serene delight afforded by artistic appreciation is not found in the theoretic activity. Moreover the disinterestedness of the scientist and the philosopher is not so complete or genuine as that of the artist or the beholder of art. For the former is said to know nature in order to use and master it, the theoretic activity being provisional and subservient to the practical one. The scientist knows nature to control her, while the philospher knows in order to know and realize his highest good. But the artist has no such ulterior motive, he seeks to enjoy emotions depicted in art for their own sakes. And this leads us to the *second* point. The contemplative enjoyment of an emotion gives one an insight into the generic form of the emotion and one's mind then sheds away, as we saw, its naturalistic attitude. That is, the mind in aesthetic experience escapes its everyday disposition to take a personal and practical interest in the world. And, now, following the Indian aestheticians, we may observe that the mind in this mood realizes its

essential nature. "Rasa is realization of one's own consciousness as colored by emotions," says Bharata.[39] The self degenerates as man takes too much real interest in the world and gets involved in it. The mind then loses its native joy and freedom. The remedy is art where the mind is made selfaware and free from any objective necessity. The mind then gets a temporary relief from its tension and outward pressure. This experience is blissful and acts as a restorative for it which emerges out with an exalted serenity and self-knowledge. This is the cathartic action of drama and this accounts for the "proper pleasure" spoken of by Aristotle and the "extraordinary charm" by Abhinavagupta.[40]

Catharsis, then, consists essentially in bringing the mind of the audience back to its own inherent state of freedom and clarity from its blind involvement in the world. This is a purificatory action of art as the mind is purified of its egotistic-pragmatic attachment to the world. These impurities veil the mind from its essential nature which is contemplative, joyous and free. Besides this purificatory action catharsis also includes a minor element, namely, the feeling of balance and harmony that art produces in the mind by virtue of these qualities found in it in a marked degree.

8.) Now a few remarks as to the acceptability of such a view to Aristotle. So far as the element of balance and harmony in catharsis is concerned, Aristotle could have no objection to it, for he recognizes these factors as marks of health as well as of a good tragedy. Measure or proper proportion was a ruling idea in Greek medicine and so was it in Greek ethics and aesthetics. We remember Aristotle's principle of the golden mean which implies balance and proportion. With regard to aesthetics we know that for Aristotle "the chief form of beauty are order and symmetry and definiteness" by which mathematics is particularly marked.[41] The beautiful is for him

[39] Bharata, *op. cit.*, 6.35. Also Visvanath says, "Rasa is identical with the taste of one's own blissful self" *Sahityadarpana* (14c. A.D.). 3.35. See also, Abhinavagupta, D. L. 1.4. And since the Indian aestheticians held the disinterested self-consciousness to be of the nature of God (Brahman), they said that *rasa* is an experience akin to that of God or ultimate reality. See. D. L. 2.4.

[40] D. L. 3.33.

[41] See *Metaphysics*, 1078a, 32ff.

the "appropriate."[42] Considering the other and chief element in catharsis, the purification of the mind of its over-much involvement in the world, we see that Aristotle also regarded emotions to be self-regarding in life and poetry as purifying the egotistic elements in them, transforming them into something pure and tranquil.[43] Thus he might have accepted a kind of disinterested contemplation of emotions for their own sakes and a consequent freedom of the mind from its egotistic or practical impulses as characterizing poetry. *That emotions in life cloud* our judgment was a traditional notion in Greek philosophy and Aristotle shared it.[44] Reason is for him the essential part of the soul, the only part that does not die in it, and the emotions have to be judicially enjoyed and strictly kept under the control of reason. So, if pure intellectual attitude of the mind marks its most elevated and noble state, aesthetic activity that reveals the appropriate form or generic essence of emotions, lifts the mind from the bondage and clouding effect of the emotions and brings it back to its health. As to the doubt whether Aristotle would accept the fact that tragedy reveals the forms of the emotions to the mind and, so, provides a lucid intellectual feast rather than a blind emotional one, this may be got round if we consider these points. *First*, he held that tragedy, being an art, aims at beauty which to him is the appropriate or the essential form of a thing, and since tragedy for him depicts the tragic emotions of pity and fear, it must, evoke them so as to reveal their essential forms or truths. *Secondly*, he regards tragedy to be an imitation like music, but then it is clear that, like the latter, it does not imitate anything but the forms of things, so, if it imitates "an action" that is serious and complete in itself,[45] it only represents the essential idea or truth of human life in one of its aspects of doing and undergoing. Naturally this will involve imitation of pity and fear also in the same sense. *Thirdly*, he explains the peculiar delight we all have in imitation,

[42] *Topics*, 102, a, 6. Also "Beauty is a matter of size and order, "(*Poetics*, Bywater, *op. cit*, p. 40).

[43] See S. H. Butcher, *op. cit.*, pp. 254-268.

[44] See, e g., *Rhetoric* (2.1), where he defines emotions like pity, fear, jealousy, etc., as what alter our judgment. The orator is advised to carry his point by appealing to the emotion of the judge and the jury.

[45] See Bywater, *op. cit.*, p. 35.

essential nature. "Rasa is realization of one's own consciousness as colored by emotions," says Bharata.[39] The self degenerates as man takes too much real interest in the world and gets involved in it. The mind then loses its native joy and freedom. The remedy is art where the mind is made selfaware and free from any objective necessity. The mind then gets a temporary relief from its tension and outward pressure. This experience is blissful and acts as a restorative for it which emerges out with an exalted serenity and self-knowledge. This is the cathartic action of drama and this accounts for the "proper pleasure" spoken of by Aristotle and the "extraordinary charm" by Abhinavagupta.[40]

Catharsis, then, consists essentially in bringing the mind of the audience back to its own inherent state of freedom and clarity from its blind involvement in the world. This is a purificatory action of art as the mind is purified of its egotistic-pragmatic attachment to the world. These impurities veil the mind from its essential nature which is contemplative, joyous and free. Besides this purificatory action catharsis also includes a minor element, namely, the feeling of balance and harmony that art produces in the mind by virtue of these qualities found in it in a marked degree.

8.) Now a few remarks as to the acceptability of such a view to Aristotle. So far as the element of balance and harmony in catharsis is concerned, Aristotle could have no objection to it, for he recognizes these factors as marks of health as well as of a good tragedy. Measure or proper proportion was a ruling idea in Greek medicine and so was it in Greek ethics and aesthetics. We remember Aristotle's principle of the golden mean which implies balance and proportion. With regard to aesthetics we know that for Aristotle "the chief form of beauty are order and symmetry and definiteness" by which mathematics is particularly marked.[41] The beautiful is for him

[39] Bharata, *op. cit.*, 6.35. Also Visvanath says, "Rasa is identical with the taste of one's own blissful self" *Sahityadarpana* (14c. A.D.). 3.35. See also, Abhinavagupta, D. L. 1.4. And since the Indian aestheticians held the disinterested self-consciousness to be of the nature of God (Brahman), they said that *rasa* is an experience akin to that of God or ultimate reality. See. D. L. 2.4.

[40] D. L. 3.33.

[41] See *Metaphysics*, 1078a, 32ff.

the "appropriate."[42] Considering the other and chief element in catharsis, the purification of the mind of its over-much involvement in the world, we see that Aristotle also regarded emotions to be self-regarding in life and poetry as purifying the egotistic elements in them, transforming them into something pure and tranquil.[43] Thus he might have accepted a kind of disinterested contemplation of emotions for their own sakes and a consequent freedom of the mind from its egotistic or practical impulses as characterizing poetry. That emotions in life cloud our judgment was a traditional notion in Greek philosophy and Aristotle shared it.[44] Reason is for him the essential part of the soul, the only part that does not die in it, and the emotions have to be judicially enjoyed and strictly kept under the control of reason. So, if pure intellectual attitude of the mind marks its most elevated and noble state, aesthetic activity that reveals the appropriate form or generic essence of emotions, lifts the mind from the bondage and clouding effect of the emotions and brings it back to its health. As to the doubt whether Aristotle would accept the fact that tragedy reveals the forms of the emotions to the mind and, so, provides a lucid intellectual feast rather than a blind emotional one, this may be got round if we consider these points. *First*, he held that tragedy, being an art, aims at beauty which to him is the appropriate or the essential form of a thing, and since tragedy for him depicts the tragic emotions of pity and fear, it must, evoke them so as to reveal their essential forms or truths. *Secondly*, he regards tragedy to be an imitation like music, but then it is clear that, like the latter, it does not imitate anything but the forms of things, so, if it imitates "an action" that is serious and complete in itself,[45] it only represents the essential idea or truth of human life in one of its aspects of doing and undergoing. Naturally this will involve imitation of pity and fear also in the same sense. *Thirdly*, he explains the peculiar delight we all have in imitation,

[42] *Topics*, 102, a, 6. Also "Beauty is a matter of size and order, "(*Poetics*, Bywater, *op. cit.*, p. 40).

[43] See S. H. Butcher, *op. cit.*, pp. 254-268.

[44] See, e g., *Rhetoric* (2.1), where he defines emotions like pity, fear, jealousy, etc., as what alter our judgment. The orator is advised to carry his point by appealing to the emotion of the judge and the jury.

[45] See Bywater, *op. cit.*, p. 35.

in an intellectual manner, by saying that we love to learn something. Can this be not applicable to tragic delight in the sense that we love to learn about pity and fear in tragedy ?[46]

Thus though Aristotle had no idea of this sort of psychotherapic purification, and the word "catharsis" meant for him some sort of religious purification (besides medicinal purgation), yet we can see that he would have no objection to our view of the function of tragedy and to our meaning of that endlessly suggestive and ambiguous word he used to describe it.

In fact Aristotle might understand the Indian theory in his own words thus. The human reason apprehends the essence or forms of things which are potentially in it, and in this consists the proper function and delight of man. The forms of the complex emotions like those of music[47] are not apparent to ordinary minds but a poet seizing them presents them through an artificial medium, and in this consists making (*poesis*) and imitation (*mimesis*). Tragedy imitates the appropriate idea of that aspect of life which is marked by pity and fear and represents it through plot, characters, and their thoughts and feelings. The represention is ideal as it is an imaginary whole, complete in itself with internal order; an autonomous world in itself. Thus it is that poetry is most philosophical[48] and its function is to reveal to man's reason the forms of emotions which color and mark different aspects of his life. And since reason is the noblest portion of man's soul and knowledge his highest good attended with the purest joy, tragedy that leads his mind to see into the forms of such important aspects of life as marked by pity and terror, is surely like a medicine to his

[46] See *Ibid*, p. 29. Aristotle here gives two reasons of delight in imitation, one the pleasure that the mere translation of an object in another medium gives us, another the joy we take in learning something. His illustration of the latter kind of pleasure does not show that he *meant* such a view of the matter as we have suggested here. "The reason of the delight in seeing the picture is that one is at the same time learning—gathering the meaning of things, e.g., that the man there is so and so" (*loc. cit.*). Yet we believe he would readily accept our view of the matter, that is, that tragedy gives us a knowledge of the emotions of pity and fear, and so, a peculiar pleasure associated with them which are themselves painful.

[47] *Politics* (1340a, 12ff.). Aristotle says that music is a typical imitative art. This shows that he believed art imitates intelligble forms of things and, so, is preeminently intellectual in nature. For what would music imitate in the sense of copying or mimicry?

[48] See Bywater, *op. cit.*, p. 43.

soul. It clears the mind of its cloud of ignorance, error, and prejudice which are the results of the vegetative, sensitive, and the affective parts of his soul. It quickens the essential soul-life of the audience and brings it to its ideal state of being toward which its nature is to proceed, (as all things tend to realize their appropriate forms), and thus acting as a curative and a tonic. This is tragic catharsis.

We conclude this rather speculative venture in comparative aesthetics with this remark that the Indian theory of *rasa* as well as Aristotle's theory of catharsis, the latter as reconstructed here to resemble the former, are intellectualistic in one sense, yet not in another. For though they hold up before our eyes the elements of disinterested knowledge involved in the peculiar tragic delight and give in its terms an account of the function of drama somewhat analogous to that of a purificatory and tonic medicine, yet, as shown before,[49] they also stress the immediate taste of emotions. Dramatic experience on this traditional theory is as much a matter of emotional exaltation as of intellectual penetration into the emotions enjoyed. Another point to note is that this latter element does not involve any such abstractive and consecutive reasoning process, and any such (either remote or proximate) pragmatic interest, as characterize scientific knowledge, which is generally known as typically intellectual. The traditional philosophy we are dealing with had an intuitive theory of knowledge which fits well with the description of the aesthetic experience as a kind of knowledge. But, again, we must remember that this philosophy described this experience also in terms of emotional exaltation. One feels an emotion intensely, yet one does it, not as in life, but only to be intensely aware of it. We must not stress one element at the cost of the other and thus lose the wisdom of the ancients.

[49] See §1, and note 13, for Aristotle's view. For the Indian view *see* §5. *Rasa* is said to be the *taste* of the principal emotion, this taste or experience involves an undergoing in some manner as well as an intellectual apprehension of the emotion. As explained before (*loc. cit.*) the emotion as undergone functions as a sign or symbol of the generic essence of the emotion, the emotion in its latter and intelligible aspect is apprehended. It may be noted that this undergoing of emotions as a means to an apprehension of their generic essences and, so, this active and intelligent response to them instead of a passive and blind one, may occur even in one's life when one takes an aesthetic interest in it and so views oneself as an actor, the world being one's stage.

Aesthetical Metaphysics

WE have metaphysical aesthetics as well as aesthetical metaphysics which shows that we sometimes allow our idea of reality, reached intellectually, to dictate our interpretation of beauty and, then, sometimes allow our experience of beauty to rule our understanding of reality. The traditional aesthetics of the West illustrates the former situation while a good section of Indian metaphysics does the latter one. We shall first substantiate this statement in this paper and then seek to put in some order aesthetical metaphysics, the basic idea of which are found in the philosophical literature of India.

Beauty as an aspect of intellectual truth, an intelligible form shining through some sensuous medium, and aesthetic activity as a kind of thesis (cognition), and not aesthesis (sensation), is the creed of the scholastics which has its foundations in Plato and Aristotle.[1] Plato's distinction between merely sensuous beauty or charm, which feeds and waters the passionate or appetitive nature of men destroying the rational one[2] and is a "soft slippery thing,"[3] and his notion of intellectual beauty is well-known.[4] Catharsis spoken of by Plato and Aristotle as the function of art can well be interpreted as ecstasy through which the passions are undergone in a spirit of sacrifice so as not only to be relived of them temporally as waste products but also actively to contemplate them as presented in appropriate forms, and thus, to be purified of them more or less permanently.[5] Aristotle's theory of imitation means really imitation of an *idea* of nature and, so, of the appropriate or the philosophical truth which nature embodies. Art, thus, seeks to express the truth

[1] See A. K. Coomaraswamy : *Figures of Speech or Figures of Thought* (1946). Also Jacques Maritain : *Art and Scholasticism* (1946).

[2] See *Republic*, 606-07.

[3] *Lysis*, 30.

[4] See, e.g., *Timaeus*, 80B, where he says that a musical composition affords sensuous pleasure to the ignorant and intellectual one to the intelligent. See also *Phaedrus*, 244 D and *Ion*, 354-55 where he says that it is God who inspires the artist.

[5] See Coomaraswamy : *Op. cit.*, Chap. I.

underlying a natural object and not to copy it.[6] There is a vital distinction between the 'subject' of art and its content. Plato, while he denounced art as imitation, and took imitation as the slavish copy of natural objects, denounced only what be held to be false art. That he had a notion of a true art is proved by his praise of such art as depicted the true or ideal being instead of the actual and the apparent one, that is, the universals instead of the particulars.[7] Certainly, this truth or universal form cannot be an actually given object to be copied out but an idea to be visualised and expressed through the medium of some recognisable matter. This happens in representative art where natural objects serve as subjects for the artist to express some ideal content which, according to Plato, is an intellectual idea or philosophical truth. In non-representational arts, such as abstract drawings and music, no such recognisable subject-matter is used and some idea is expressed more or less directly. These arts are still called imitations because of their depicting the appropriate rhythms or forms of our emotive nature. These forms are the truths of our emotions to be apprehended intellectually and given to the senses. As no recognisable matter intervenes between the idea and its imitation and the artistic activity is purely imitative of the idea and not of any natural object or appearance, this form of art is held as purer and higher than the representative one. Schopenhauer, we know, regarded music to be the highest form of art for this, according to him, was reality itself while other forms *represented* reality in various manners. All this goes to show how one's intellectual metaphysics rules one's aesthetics.

The opposite situation, one's aesthetical experience ruling one's metaphysics, may be shown from much of Indian thought. Indian aesthetics has been in the main unaffected by any intellectual metaphysics. Aesthetic contemplation has been at the outset regarded as distinct from theoretic understanding and beauty

[6] See Aristotle's *Poetics* (Bywater's Translation), Chap. 9. The poet is "to describe not the thing that has happened, but the kind of thing that might happen, i.e., what is possible as being probable or necessary . . . Hence poetry is more philosophic and of graver import than history." Also "The beautiful is the appropriate" (*Topics*).

[7] See *Republic*, 484, 472, 597-98.

distinct from intellectual truth. While Plato and the Scholastics[8] hold artistic activity to be a feast of reason, the Indian aestheticians take it as a feast of feeling. Of course a clear difference is made between a feeling as excited by an object and suffered in a passive manner and one actively enjoyed when one freely feels for or sympathises with some depicted feeling suffered by no real person. Yet the latter kind of feeling is not confused with a cognition of feeling such as might be obtainable in some intellectual activity, normal or supernormal.[9] We have to feel the love or sorrow depicted in art as we would have felt it in reality, only in aesthetic enjoyment of it we have a consciousness of our feeling as freely undergone. In sympathising with the feeling of our friends or relatives we have yet some compulsion and passivity, but in aesthetic enjoyment there is not even this compulsion. This consciousness of freedom and this "psychical distancing"[10] does make a difference in the flavour of the feeling, but it certainly cannot pertify it into an object of cognition or crystallise it into a near concept. The feeling is the support and feeder of the aesthetic enjoyment which is feeling *par excellence* and no knowing. Those who stress the transcendent aspect of feelings in aesthetic enjoyment and, so, underline the qualifying words of the phrases "objectification of feelings" and "disinterested contemplation of emotions," which are commonly used to describe artistic attitude, forget that the feelings so objectified or contemplated must be undergone in order that they may be so treated. If the treatment kills the feeling, then artistic enjoyment collapses.[11]

[8] We exclude Aristotle as his position in this respect is a bit different.

[9] In Indian philosophy, particularly in the Yoga school, feelings are thought to be cognised and so transcended. But the Indian aestheticians do not regard this knowledge of feelings to be the object of artistic contemplation. See, e.g., *Mammata*: *Kavyaprakasa* (a work of 11th century) 4.28, and commentary thereon where he says he summarises Avinavagupta's (a 10th famous century Indian thinker) views.

[10] See author's paper, "Psychical distance in Indian Aesthetics", *Journal of Aesthetics and Art Criticism*, Dec., 1948.

[11] Wordsworth recognised this when he wrote of poetry: "It takes its origin from emotion recollected in tranquillity, the emotion is contemplated till, by a species of reaction, the tranquillity disappears and an emotion kindled, so that which was before the subject of contemplation, is gradually produced and does itself actually exist before the mind." *Preface to Lyrical Ballads* (1800). The intellectual aestheticians generally quote the first clause and omit the rest.

Now this Indian theory of art is based on a direct experience of art and not on any intellectual predilection about it of metaphysical origin. It is more a psychology of artistic experience than a philosophy of beauty. Beauty is apt to be held, as in the Western tradition, as a metaphysical object and, so, readily identified with truth and reality following the principle of parsimony. Indian aestheticians do not consider beauty as an objective reality so much. They deal with the perception of the beautiful which is an enjoyed characteristic like taste or flavour[12] rather than a substantive entity. Instead of interpreting beauty in terms of some intellectual idea of truth and reality and our aesthetic perception in terms of the cognitive faculties,[13] some Indian philosophers tend to interpret ultimate truth and reality in terms of beauty as a subjective relish and cognition as an element in aesthetic perception or feeling. One Vedic seer speaks of the Supreme Reality as essentially of the nature of aesthetic relish (*rasa*)[14] and to know it is to realise or feel it. That is, it is given in unitive knowledge and not in one characterised by subject-object duality[15] which is, however, knowledge properly so called. Another Vedic seer speaks of God's creating the world like an art-object and of artists as imitating God in their artistic activity which is, therefore, a kind of worship to god and a means to self-realisation.[16] Some aestheticians have described artistic enjoyment as similar to the beatitude that accompanies one's experience of Reality itself.[17] Creation

[12] *Rasa*, the key-term in Indian aesthetics, signifying aesthetic relish, literally means taste or flavour.

[13] See e.g., Liebnietz—Wolff theory of aesthetic perception as a confused conception. Though Kant criticised this theory, he, nevertheless, held aesthetic perception to be a free play of understanding and imagination and 'cognition in general' though not a conceptual one. He considered emotion to be a posterior and a consecutive fact in aesthetic perception and not its constituent or ground. See *Critique of Aesthetic Judgement*, *9.

[14] *Taittiriya, VII.*

[15] We are reminded of the criticism of dualistic knowledge by Bradley and Bergson. The former spoke of reality being knowable in the manner of love and the latter in the manner of aesthetic sympathy.

[16] *Aitereya.*

[17] E. g., one describes it as *Parabrahmasvadasaciva*, literally meaning similar to the relish of the Absolute Reality (or God). *Dhvanyaloka Lochana* (2.4), a 10th century work by Avinavagupta.

itself is regarded by some Vedic seers as a shadowing forth of the world which has no reality co-ordinate with the creator.[18] The concept of *maya*, which is the pivot of Vedantic metaphysics, can have meaning only in an aesthetic sense, and *lila*, which literally means play and is the Indian answer to the question 'why does God create ?', has been conceived after imaginative recreation or artistic contemplation. It is well-known in theology that God, being perfect, cannot have any real thing to serve, any real want from which he might be suffering, nor can he lapse from perfection and suffer any real change. All this imperfect world of change and multiplicity, therefore, has to be considered as illusory, shadowed forth by God for his imaginative recreation which is but a sign of his joy and abundance. We, in so far as we are artistically active, imitate Him and taste the divine joy.

Now, though aesthetical ideas abound in Indian philosophy which views reality predominantly as an experience rather than as an object among objects, yet no attempt has been made to elaborate an aesthetical metaphysics. Intellectual prepossessions could not be thoroughly got over with the result that there are many knots and inconsistencies even in an aesthetically orientated philosophy. For instance, the relation between the Absolute, conceived as a Self, and the individual selves has not been clari fied. But we may smoothen out some of these rough ends and put aesthetical metaphysics in a better light. This type of metaphysics differs from an intellectual one in that while the latter holds our scientific knowledge to be the pattern for knowledge of reality itself, the former holds our aesthetic experience to be such pattern. There is nothing to decide between the two approaches except perhaps our temperament. For metaphysics cannot be directly verified in ordinary experience and it must be judged by its internal consistency and *a priori* plausibility.

To put our aesthetical metaphysics in order, then, we have to recognise reality as an experience such as we have in art, the objects experienced having no independent reality apart from the experience. An aesthetically enjoyed object is not felt as independent of the experience, it appears as a sign for some feeling which is freely undergone and so enjoyed, as we have

[18] See Sankara's commentary on *Brihadaranyaka*, 1. 4. 3. and 4. 3. 7.

shown before. When we do not enjoy something in this manner but only know it and use it we are affected by feelings which we cannot freely contemplate and then the object appears to be independent of the experience.[19] An unenjoyed but merely known and felt object, which is sought to be enjoyed but proves refractory, appears ugly. Now the objects of the world are generally known (intellectually), used and felt (passively suffered) and so taken for independent realities in our ordinary mental attitude that may be termed realistic. But in our aesthetic attitude towards them, they become parts of ourselves, each suffused with a particular feeling which is now freely enjoyed for its own sake. The objects now appear as symbols of feelings they arouse in our realistic attitude, meaning these feelings instead of exciting them. We speak of dark clouds as meaning sombreness, rose—youth and passion, white doves—purity, gentleness and divine love, spires—aspirations, and so on. Poets delineate feelings with the help of these objects which serve them as imagery. So that in the aesthetic mood we dissolve and appropriate this world with the solute of aesthetic emotion which wells up as soon as we regard the primary feelings excited in us by the world as objects to be enjoyed for their own sakes and not undergone passively or used to serve some practical purpose. (The pleasurable feelings inform us of the desirability and the painful ones of the undesirability of things). Whatever is not so appropriated in the aesthetic mood appears ugly. But nothing really remains ultimately unappropriated. What appears at one stage of aesthetic mood as ugly is but difficult beauty. The difficulty is due to many reasons, such as, too much or too little complication or magnitude, obvious unpleasantness or danger to life. This difficulty is overcome in a higher stage of aesthetic contemplation when what was ugly becomes sublimely beautiful. Now this stage of subjectivity, in which natural objects appear to be objects of art, symbolising or expressing

[19] This is the realistic-pragmatic attitude to objects in which they excite feelings which we suffer passively instead of enjoying self-consciously. This is the intellectual or cognitive attitude which, as has been shown by Bergson, is really pragmatic. And as I. A. Richards has pointed out, feelings have a cognitive aspect, they serve practice, we know the feelings they arouse. (*Principles of Literary Criticism* p. 98). So that the cognitivez affective-pragmatic attitude is a single attitude which may be shortly indicated as the realistic one as distinguished from the aesthetic.

feelings, which are enjoyed (and not suffered as excited feelings) is one akin to the Absolute Self or God. God's experience of the world is an aesthetic one, the whole universe is created by Him as a piece of art to be enjoyed for its own sake. He is then a grade of subjectivity and we approach Him qualitatively as we succeed in developing an aesthetic attitude to the world, overcoming our usual bio-physico-intellectual one to the same. We approximate the Absolute mind qualitatively as our experience of the world becomes more inclusive and unified.

One important point to recognise here is that personality, mind or selfhood, whether of God or man, is never an object or thing which God creates and enjoys and man ordinarily knows and suffers. It is nothing, and if by mind we mean some objective mental or spiritual stuff, it is also no-mind as the Zen Buddhist puts it. My self or my mind is never known as a meant object but only as a subject, symbolised by "I", who means objects. So God is no entity to be known by us but a grade of subjectivity. And since grades of subjectivity are a fact, we being sometimes in the dream or illusory states, sometimes in the intellectual-realistic one and sometimes in the aesthetic one, we can very well imagine God to be a grade of subjectivity immanent in our subjectivity. Since God is no thing, the problem how we can be parts of Him cannot be insuperable. And this will also make it easier for us to think how we can have a realistic attitude to the world. For, then we are in the lower level of subjectivity just as in our dream and illusious we are in a level lower to our ordinary realistic one and take for reality, suffer and use objects that are illusory from the empirical standpoint. We are in our ordinary realistic attitude to God as our dream-selves to our waking self. We may be said to relish aesthetically our fantasies, enjoy actively the feelings suffered there. Even in our dreams we may be said to enjoy, unselfconsciously, the feelings we suffer there. So it may be said that even in our main realistic attitude, when we do not think of our feelings of joy or sorrow being freely enjoyed instead of being passively suffered, we may be still unselfconsciously so enjoying them. Using this rather paradoxical idea of unselfconscious enjoyment we may say that God is ever enjoying his creation, which has been created for this purpose, in different degrees of unselfconsciousness, less when we view the

world aesthetically and more when we view it realistically. And since we do not have a perfect vision of the whole universe as a thing of beauty, God or the Absolute self-immanent in us has to be regarded as overwhelmingly unselfconscious becoming more or less conscious through our aesthetic activity directed to the contemplation of the world.

This is a sketch of an aesthetical metaphysics, which, as presented here, leaves many a question unanswered. But we must not extend the scope of the present endeavour beyond a bare indication of a possibility of such a metaphysics as our chief interest here is aesthetics and not metaphysics. We have merely shown how the Indian aesthetical categories, *rasa*, meaning active enjoyment of feelings, and *lila*, meaning imaginative recreation, may be the basis of an aesthetically orientated metaphysics in which the ultimate reality might be considered as a supreme Self shadowing forth this universe and enjoying it through us, partly selfconsciously but predominantly unselfconsciously. This supreme Self or God may thus be conceived as immanent in us and realisable by us and not a transcendent being which poses many difficult problems. It goes without saying that this kind of metaphysical speculation, though it has many affinities with some speculations in the West, has its own difficulties. But to discuss these or to support the scheme offered here would lead us outside the scope of this introductory essay.

Artistic Object and Enjoyment

(AN ESSAY IN A CO-ORDINATED THEORY OF ART)

1. *Object and Method of enquiry; also its scope and validity*

THE aesthetic theories defining the specific nature of the object as well as of the enjoyment of art are many. There are the major theories of making, symbolising and expression, also the minor ones of pleasure, play and irony. There are also certain antithetical notions about art such as that it is imitative and creative, affective and intellectual, personal and impersonal, interested and disinterested, deliberate and inspired. Our object here is to propose a theory which is *prima facie* a plausible one and which, moreover, comprehends and reconciles the partial truths of other theories and notions about art, and, so, attains reasonableness. It is a theory that has been only partly sensed by some Western and Indian aestheticians and have not gained acceptance in modern thought. We wish to offer it here in an independent manner leaving out its historical affiliations for later discussion.

Certain logical questions respecting this matter of proposing a theory or definition of art must first be disposed of. It must be pointed out that a theory or a definition is the result of a free decision and as such it is a verbal recommendation which one is free to accept or reject. Those who believe with the Greeks and the modern British thinker Alexander that art is making will accept neither the physical performances on the trapeze nor the mental ones in an idle brain as art but will consider a well-made boat or a hut to be such. But there are persons who believe art to be a matter of performing a delicate task of balancing of opposite forces, and while some of them will restrict art to such performances done in imagination while it holds an illusion critically balanced against disillusionment, others will extend it to the circus and the cricket ground. They will not call a boat or a hut art. The expressionists, headed by Croce, will not admit any such natural product, not even a painting taken as a physical object or work of art, into their conception of art

which will reject all but the ideal and immediate mental images expressing one's personal emotive attitudes. But this view will not explain why art is universal or communicable, and so a symbolist aesthetician will define art as the discovery of generic signs of certain common attitudes of man and employment of them as symbols to communicate those attitudes to others. A work of art, then, embodies a generic sign for some attitude, for instance, a tall oak for strength and fortitude. But this theory does justice to the communicable and universal nature of art at the cost of its concrete individuality and living immediacy. The theories of pleasure and play too respectively stress only one element of art and fails, on the one hand, to distinguish art from many other activities which one may not call artistic and, on the other, rejects many activities as extra-artistic which one may consider essential to art. From the above illustrations we wish to deduce two things. (1) In one respect it is up to the theorist to define art in any way he chooses and so to include or reject any number of activities in or from his concept of art. Our theory, therefore, is offered here and should be taken by our readers as a proposal to use the term 'art' in a certain way and, so, as a criterion by which to judge what is good or bad art and what is neither. It is thus a linguistic prescription disguised as a description and as such it is closed to rational criticism and open only to one's approval or disapproval. (2) This, however, is only one side of the matter of concept formation in aesthetics. We have also to see how far a particular definition of art can be employed in practice to justify and comprehend the most closely and universally held ideas about art. Otherwise our definition will be merely verbal, a mere logical sport without any theoretical import. A definition or theory is made to help our relating of facts and, so, understanding of them. So far as it is not an idle logical game but has a factual reference, we have a means of justifying it and of judging its cognitive value. So we can claim merit for our own theory if we can show that it is *prima facie* true and it comprehends the truthful elements of other theories and notions about art which impress us and account for the vitality of those theories and notions. These truthful elements which have won universal acceptance are but what really define art, and our theory will be true to the extent it can incorporate in it these elements as natural consequences of this

theory. But there will remain an element of free decision after all in this or any theorisation. For, what are the more universally accepted notions of art in a society are by no means wholly agreed upon, and there are different notions in different societies. Again, even if we agree upon a list of more accepted notions in a particular society or culture for which only art is defined, we may still find a few such notions not compatible with the rest and, so, with our theory, which therefore cannot be wholly descriptive or representative but is partly prescriptive or normative. It will not merely tell others what they, as members of a particular society, do mean by art but also what they *ought to* mean by and value as art. Our theorising here is thus ambivalent in its nature and purpose. It seeks to bring together certain generally held notions about art under a common head and thus to describe what we mean by art, and yet it will correct many such notions and reject others and thus will posit an evaluative criterion of art for free acceptance or rejection by readers. It seeks to inform as well as reform readers with respect to their notion of art.

Another question of logic has to be clarified. An art-object is defined here in terms of a subtle interplay and critical balance between the principles of illusion and reality obtainable in imaginative experience. Artistic enjoyment is defined as that associated with this activity. Now taking the present character of nature and our mind for granted, we find that certain circumstances are required to fulfil these critical conditions and so to realise art-experience. These circumstances may be viewed as natural consequences of our theory of art and, so, as accessories and integral to art. The variety of enjoyment associated with these circumstances may also be similarly related to the essential artistic enjoyment which is thus sustained and enriched by these auxiliaries in the same manner as a dominant emotion like love is sustained and enriched by subsidiaries like longing, unrest, jealousy, delight, sadness etc. The essential characters respectively of art-object and artistic enjoyment are then each supported by certain more specific characters which too enter into the definition of these categories. We will find that balance of opposites, expression and symbolising of emotive attitudes, imaging forth of content and conception of unifying forms, are all needed for the full realisation of art. We may

therefore speak of these processes as natural consequences and ingredients of artistic activity, and of the products of these processes as consequences of the art-object as originally defined by us. We may similarly speak of the various enjoyments associated with these circumstances in relation to the essence of art-enjoyment as we have defined it. Now the consequence mentioned here is not logical but natural and the necessity or rationality ruling the relations amongst the various circumstances mentioned here, and so this analysis itself, are not strict. If these were logical and strict the variety of circumstances and enjoyments spoken of would be tautological reductions of the starting definition of art and so our analysis would be trivial and unexciting. Yet our imputation of necessity to the relations of the various elements is not just nominal and our present enquiry just a report of how these elements happen to hang on each other for us at this moment. We, by a critical study of constant relations of certain uniformly observed elements of nature, both non-human and human, are seeking to evolve a real(as against a verbal) definition of art in terms of these elements so that what appears to us to be but tentative, may if our analysis proves correct and is adopted by others, and if nature meanwhile does not change her ways, be a certainty and our theory and definitions will have the felt necessity and inevitability of a logical deduction. One may then speak of art as *meaning* the things we mention here as involved in it just as one speaks of a triangle meaning that its three angles together make two right angles. Knowledge is always aspiring after reducing the contingency of the given to the necessity of thought and so is observing with patience the regularities of nature and defining its concepts to represent nature more faithfully or truly. But this is just an ideal serving as a regulative principle or directive of reason and it cannot be fully realised. For, otherwise, nature would be reduced to the corpse of a deductive system and the pursuit of knowledge would come to a stop. So we must recognise in any cognitive venture, such as the present one, the irony or tension of opposites, of the rational and contingent factors in knowledge. Our endeavour must meet only partial success and our conclusions must be essentially tentative. Perfect failure in our cognitive venture represents one kind of collapse of the vital tension between progressive nature and perfectionist reason while perfect

success does another. Both the extremes are undesirable. And, if we are pardoned a metaphysical argument here, they cannot be possible. For, human reason being continuous with nature, from which it is said to have evolved, must have some natural insight into the latter which, however, must be reason-like and so essentially spontaneous in nature and not *as* ordered as reason uncritically anticipates. Thus we may clear our mind of certain possible misunderstandings regarding our method and terminology and also of both scepticism and dogma with respect to the general scope and validity of such an enquiry as this.

2. *Our theory of art as conscious self-delusion*

The theory we propose is that of artificial illusion, deliberate self-delusion or feigning. The object of art is a dream or illusory object with this important difference that we are aware that it is so and yet we, instead of rejecting it, maintain it. We, in other words, take an object to be real in a pretended manner knowing it to be illusory. The artist who creates an art-object knows it to be created yet takes it as if it is given to him, while the spectator who reproduces in his mind the same object through a contemplation of the naturalistic expression or symbolic representation of it in a work of art takes it as if it is a directly given or real object. Artistic enjoyment consists primarily and distinctively in this imaginative activity. This view of art is not far-fetched and abstract but has, we believe, a *prima facie* simplicity, plausibility and appeal to our mind, besides its comprehensiveness as a theory, and therefore, its possible truth. That we take a natural delight in things irrespective of whether they are good or bad, pleasurable or painful, and thus contemplate them for their own sakes, or more correctly, for the sake of the experiential quality and variety they provide us, is well-known. A child is so hungry for experience that, not satisfied with what he perceives by means of his eager and restless senses about him, he imagines things and incidents to please himself. With only a very meagre aid to this imagination in the form of a stick or a piece of thread or a toy-cart, and even without these, he can create for his pleasure a series of incidents full of colour, life and excitement. Art represents only a little more sophisticated, formal and conscious activity and enjoyment than this original one. Art takes its origin from man's awareness of the

power of his imagination, that presents him with such pleasures as reality cannot, and from his conscious cultivation of and delight in this power. Art is thus not as natural or original as some think : for instance, those who believe with Aristotle that it expresses our natural desire for imitation and knowledge, or those who consider it a means to gratify our emotional needs, or again, those who view it as a mere continuation of our childhood play. Yet it is not for that reason as artificial, complex and formal as some construe it : for instance, Kant, who thought it to be the product of a subtle interplay of imagination and understanding occurring somewhere in the dark background of our mind. One can well appreciate, we believe, what is meant by the exercise of and delight in one's imaginative activity itself primarily and in its products only secondarily or consequentially. There is nothing very profound about it. Art is the result of this self-reflective attention of the mind to its own imaginative capacity and of cultivation of it for the peculiar pleasure it affords us. It is like one's becoming aware of the functions and pleasures of our palate and attending, primarily to this as the end and to the food-stuff as means. One then eats and drinks for the pleasure of one's palate instead of getting this pleasure as a natural consequence of eating and drinking which is done normally in an unreflective or impulsive manner to satisfy an organic want and a desire for food and drink that arise from this want. The epicure makes pleasure from his food and drink, not these things themselves, the object of his desire. Hence, there is a qualitative change in his enjoyment from that of a normal man who also enjoys his cups and dishes.

3. *Reconciliation of imitation with invention in art : Some other results*

Now having defined our conception of art, let us pass on to some of the conditions that must be fulfilled to realise art-experience. Since we know but one world to be real, the world of our artistic creation or illusion must derive its elements or contents from the former. In other words, imagination must work on the materials supplied by nature and the object of art must resemble some piece of nature. Otherwise conscious delusion or artistic illusion is not possible, as what has to be taken for reality must resemble the only reality we know. But this resemblance must not be so close, or the copy of nature in

art so servile, that *either* one is really taken in by the presentation *or*, if this is checked by certain other extra-artistic reasons such as the frame of a painting or the stage of a play that fences off the art-world from reality, one is impressed more by the imitative skill of the artist and put in a cognitive and verificatory mood. In either case one will not have the sense of the illusory world willingly entertained by imagination and taken as if it is real. Hence we can understand from the standpoint of our theory the generally admitted requirement in art of a proper degree, neither too much nor too little, of verisimilitude. We can understand, in other words, the dynamic tension and reconciliation between two opposites, imitation and invention, in art, and so appreciate the mastery of the artist over this ironical situation which, if not controlled with sustained skill, would end in aesthetic failure or ugliness. We can thus include in our theory and reconcile by its means the conflict between two opposite notions about art, those of imitation and invention. The appreciation of the balance of opposites and the artistic skill it involves is regarded by some, those of the ironical school, to be the essential aesthetic value. We, however, admit it as a necessary adjunct to what we think to be the essential aesthetic value, *viz.*, the enjoyment of illusion as such.

Our theory also explains the general insistence on a proper frame of mind with which one is to approach art. One must neither be so realistic or unimaginative as to be unable to cooperate with the artist and enter into the latter's dream-world with "willing suspension of disbelief," nor must one be so dreamy and forgetful of the total situation as to be deceived by the artists presentations. In other words, one should not tell himself, while seeing Iago on the stage, that he is but the gentleman actor Mr. X doing his part, nor should be he so worked up as to throw whatever he finds handy at the devil of the play. Thus our theory reconciles two antithetical notions about art *viz.*, that it is disinterested and that it is interested. This theory also generally accounts for, and can be used to determine the right amount in specific cases of, such extra-aesthetic objects which mark off the work of art from its natural surroundings and thus ward off naturalistic responses on the part of the appreciator. We mean objects like the frames of a painting and those used in a play such as the stage, auditorium decorations, make-up and

dress. The painter and the dramatist want the beholders to take the artistic subject-matter as an illusory object and not as reality. They use certain extra-aesthetic means along with certain aesthetic ones to induce imaginative sympathy in the appreciator without which he cannot have the illusion of reality, but they also see to it that he does not forget that it is after all an illusion and so miss the essential aesthetic pleasure which arises out of a critical state of balance between illusion and reality when an illusion is deliberately cherished as if it is real. So they use both aesthetic and extra-aesthetic means to make the art-world appear as a make-believe one. The aesthetic means to induce imaginative sympathy in the appreciator is a vivid depiction of reality in art and the extra-aesthetic means is the placing of the work of art in such surroundings and with such accompaniments as invite the appreciator to lend his attention and belief. Paintings cannot be appreciated if placed in a busy street corner nor poetry when read in a large gathering; we require a right atmosphere for these. The background music and the atmosphere of the auditorium have similar relation to the play. The aesthetic means to counteract the effects of the above means to induce belief in the art-object is invention of novel things and situations and some artificiality in the manner of presentation; the non-aesthetic means for this purpose have already been noted. We thus see that art is the battleground of opposites where belief and disbelief or sense of reality and of illusion are both sought to be created by various means and which, instead of neutralising one another, oscillate in the mind and are thus said to be held in dynamic balance. This aspect of art was noticed by Bullough[1] who held that the art-object must be neither under-distanced nor over-distanced.

4. *Reconciliation of comprehensiveness with free selectivity*

We have so far seen how our theory can comprehend under a single concept the partial truths of the theories of imitation,

[1] See Edward Bullough : "Psychical distance as a Factor in Art and an Aesthetic Principle" : *British Journal of Psychology*, June, 1912. Also see in this connection the present author's article "Psychical distance in Indian Aesthtics" : *Journal of Aesthetics and Art Criticism* (American society for Aesthetics) Dec. 1948, where we have shown how the Indian aesthetician, Avinavagupta, also noticed this feature of art and explained it in his own terms.

invention and irony and also explain in the light of this concept certain accepted principles of aesthetic practice and appreciation. We now pass on to consider certain other features of art as they follow from this key-concept of ours. Since the content of art must be derived from nature we have to specify the manner in which this derivation must be done. The manner must be such that the aesthetic enjoyment as understood in our theory may be maximum. Since the imaginative pleasure or the enjoyment of an illusion increases with the richness and variety of the illusory object contemplated, the content of art must be as rich and various as nature itself. All the features of nature including life must therefore be in principle included in art which has no special subject-matter of its own. The features to be included are limited by the limits of technique of the particular art-form and by the limit of toleration of a particular art-work, the latter limit depending upon the total aesthetic situation and the general psychology of conscious illusion or feigning. To illustrate the first kind of limitation to naturalism in art, we may mention the exclusion of sounds and actions in painting and of visible forms in poetry and music, though it may be noticed how even these are sought to be represented in a faint and indirect manner by way of suggestion. We seem to see movement and hear sounds in some paintings and we have poems that are said to be vivid or graphic and some music that call up vague forms in the mind such as a sky clearing up or the lengthening shadows of evening. To illustrate the second kind of limitation to naturalism, we may mention the suppression of details in a horror or pathetic scene in a novel or drama. These scenes, if depicted without moderation, would be explosive in the sense that the reader or the spectator would not be able to maintain the intricate dynamic balance between the sense of illusion and that of reality which is required, according to our theory, for aesthetic enjoyment. The production and maintenance of this balanced attitude depends to a large degree on the specific situation in a particular art-work. A scene of horror or pathos may explode and so irritate instead of pleasing us by appearing to be forced and unreal if it occurs in a short and simple piece and stands more or less alone without any adequate balancing by other passions. But such a scene may be quite minutely depicted without loss of its aesthetic appeal in a drama of Shakespeare or

a novel of Dickens because of the large canvas we have there and the consequent sense that this horror or pathos is one of the many passions, both agreeable and disagreeable, that characterise human nature and life. Thus realism in a short canvas or isolated parts is a kind of idealism or artificiality which is rejected as unreal by the reader or spectator who may admit the same realism if it is not so selective but more extensively applied and so offers him a fair sample of the complex of passions we have in life. Now since the art-world will have to be, for technical reasons, raised on a selection of materials from nature of which it can and need never be a duplicate, we require for enhancing the aesthetic enjoyment a fair or representative selection. The art-world must be the world in miniature. It must neither be so partial or biased in its selection of materials as to appear unreal nor be so comprehensive as to appear as a piece of world-history. Hence both comprehensiveness with respect to nature and the abstraction or free selective character of an ideal representation are in dynamic equilibrium in a piece of art.

We have so far noted two pairs of such opposites being balanced in art : the one, imitation and inventiveness; the other, comprehensiveness and free selectivity. The two pairs must be distinguished from one another. A news report versus an idle fairy-story represents the former opposition, while James Joyce's *Ulysses* versus any tale of uninterrupted pathos, horror or heroism represents the latter. Each of these performances just mentioned fails as effective and mature art because of the lack therein of tension between opposites and of the sense of difficulty overcome with masterful skill. But this is only a criterion of good art and not an artistic value in itself. It is a criterion because it is involved in the meaning or definition of art as conscious illusionism. The enjoyment of this conflict and reconciliation of the opposites and of the artist's mastery in this fine sport is only incidental to the chief and distinctive enjoyment of art derived from the circumstance of an illusion being consciously entertained as if it is real. Such an enjoyment as incidental or consequential is found in many other activities such as circus performances like those on the trapeze. The theory of irony or tension would include all these activities under art.

5. *Social universality and communicability of art*

Our theory of art, on the other hand, appears to be committed to admitting anybody's fantasies as art. For, the fantasy-thinker enjoys them as illusions consciously taken for reality. But this is repugnant to our commonsense notion of art as some universally sharable experience and the art-object as some stable, or as in music, repeatable, external object. Cannot we make room in our theory for this concept of art ? If we do not and declare the commonsense concept of art to be a prejudice, then our own theory will be condemned by commonsense as idle, a verbal game with the word "art" signifying nothing of what one commonly recognises as art. We cannot afford to break with commonsense altogether and prescribe a private use for the word "art". We can, however, admit the objective idea of art into our theory as integral to it. One's private fantasies may be artistic so far as they are illusions taken as real, but they are not very enjoyable because of the sense of privacy and incommunicability associated with them. Communicability and sharability is an element in the sense of reality and one's fantasies being known as subjective are not accepted as real to that extent as a fully sharable art-experience is. Thus the social aspect of art is included in our theory that defines reality as what is commonly found in nature and interpersonally sharable and acceptable. The illusory world of art is entertained as if it is real because, *first*, of its naturalness as we noticed before, and *second*, of its sensed communicability to and acceptability by other minds. Tolstoy[2] emphasised this social aspect and socialising function of art. The symbolists noticed the universal meaning-aspect of art-experience which corrects and is complementary to the individual existential aspect of it stressed by the expressive theory. The conscious illusion theory finds room for both these theories and thus enriches itself by the partial truths they respectively embody. It does this by simply re-

[2] See his *What is Art* ? (translated by A. Maude, World's Classics, Oxford) (Chap. 15): "In this freeing of our personality from separation and isolation, in this uniting of it with others, lies the chief characteristic and the great attractive force of art". Also, Chap. 16. "Art, all art, has this characteristic that it unites people." Rabindranath Tagore also stresses this communicative aspect of art: "Our mind is searching after another to release its burden of thought, to inject its own feelings into another mind". (*Sahitya*, 1341 B.S., p. 60 (trans. ours).

cognising that the art-experience is a particular individual experience in which generic images and meanings or intelligible forms are embedded and by virtue of which it is associated with a sense of sharability and objectivity, and, so, of greater stability and reality. This enhances the enjoyment of the experience, for the more real the individual illusion can be supposed to be by virtue of its naturalness and wide acceptability, the richer will be the sense of conscious illusionism or creativity. Here again we notice a tension, *viz.*, the one between the form and the content of art. The otherwise individual and chaotic content of art-experience must be held together by formal unity or meaning-structure that is seen embedded in good art-experience and that distinguishes a subjective feeling-mass, which is hardly artistic, from an intelligible whole of sharable experience which is essentially artistic. The successful artist does not rest content with the specific images, quick and vivid in their presentational immediacy, but seeks to discover some generic signs, meanings and values with which this experience may be shot through and by virtue of which it may be considered as a sharable and intelligible aesthetic experience. The generic signs, meanings and values are mostly the product of the artist's racial and cultural background and, so, the limit to universality of his art is set by the limits of uniformity found in the human race and culture, which show a marked degree of differentiation, and also by the limits of his own self-socialisation. Again, the more intelligent and conscious the artist is and, so, aware of the generic factors of experience which have their roots in his social life, the more deliberately he seeks to imagine a specific content or aesthetic surface to embody these factors. In any case, the generic factors or universal references are intimately fused with or merged in the specific content which appears to be a unique and immediate experience and yet suffused with a meaning reference and a claim to universality.

In this lies the peculiar power of the artist, the capacity to image forth significant images or intelligible contents. He differs from the scientist in this that the latter's generic signs and meanings are more abstract and give mediated knowledge of objects under certain physical conditions, while those of the former are more concrete and give immediate knowledge, of course, mainly of emotive values or feeling-patterns associated

with concrete objects and human situations.[3] Thus art reconciles the opposition of specific chaotic content and generic ordering form or, in other words, isolationalist and contextualist tendencies, just as it reconciles other opposites mentioned before. An unequal tug-of-war between these two opposites will lead to aesthetic collapse. Too much concentration on the generic or meaning pole of the experience will reduce art to science or iconology, while a similar one-sided emphasis on its specific or intuitive pole will result in such individualistic and bizarre effects as some modern experiments in art amply illustrate. In either circumstance the illusory world raised in imagination will lack the semblance of reality, for reality is concrete universal or unique actuality touched with ideal meanings or references and, so, sharable in common or objective; it will not therefore provide aesthetic enjoyment the secret of which lies in the paradoxical contemplation of an imaginary construct known as an illusion and yet, instead of being corrected, supposed to be real. The play of opposites is at the very heart of our concept of art. The art-world is an obvious illusion but with a semblance of reality and, so, it must have the essential content and quality of reality in such an optimum measure that neither its illusoriness is disturbed by too much resemblance to reality nor its assumed mask of reality blown off by too little of this resemblance. In the former two cases of conflict and resolution of opposites in art we have noticed the critical balancing of the resemblance of the art-world to reality against deviation from it, while in the present case we notice similar balancing in this feigned world of the specific against the universal factors of experience after what is found in reality about us. This enhances the imputed reality of this feigned world which otherwise, as we noticed, becomes either private and isolated or general but abstract, and so helps

[3] A detailed account of the process of objectification of feelings in art in terms of Western as well as Indian aesthetic concepts is given in author's *Studies in Comparative Aesthetics* (*Visva-Bharati Research Publication*, 1953), Chap. 2. The related problems of de-individualisation or psychical distancing and of communication of feelings in art has been very ably treated in Indian aesthetics. *See also* the author's "Catharsis in the Light of Indian Aesthetics", *Journal of Aesthetics and Art Criticism* (Dec. 1956), where the problem of the chief function or end of art is discussed in relation to the cognate problem mentioned above and the views of Aristotle and Indian aestheticians are sought to be determined and reconciled.

converting this world into an aesthetic object with its distinctive pleasure-value. There is no danger, however, that this contribution to the reality-sense of the art-world by the harmony of the two factors of experience, generic and specific, might in any way assume such a magnitude as to be detrimental to the fine balance of the sense of illusion against that of reality with regard to this world and so disrupt it. For, as may be readily appreciated, this contribution has its own maximum value, that is, it cannot increase the sense of reality of the art-world beyond a certain circumscribed limit, while its absence would certainly snap this reality-sense and reduce the world either to chaotic subjective images and feelings or to abstract generalised science or iconology. This rather asymmetrical relation of art to the balance of the specific and generic factors of experience is due to the fact that this balance is a formal feature of reality and the resemblance that the art-world bears to reality when this balance is obtained at its maximum is only formal, not material. Resemblance in form or structure will naturally have only a limited positive effect, though an unlimited negative one, on the illusory world, for while perfect structural resemblance will not materially enhance the sense of reality of this world beyond a certain limit, its total absence will severely injure this sense. So this balancing of the specific and generic features of experience is more a negative condition of artistic success than a positive one. It is like the action of 'trace' minerals such as manganese and cobalt in our body; total absence is fatal but an intake of them in very small quantities helps to improve one's health; in larger quantities they have no positive effect on the body which eliminates their surplus.

6. *The problem of aesthetic sympathy and detachment and of the artist's personality*

We have thus shown how an intelligible form and social universality of art-experience is integral to our concept of art. We have also noticed how this concept includes the partial and complementary truths of expressionism and symbolism. Art-experience is an immediate imaginative expression of the feelings and attitudes or value-intuitions of the artist, and yet it is interpenetrated by generic signs and meanings by means of which it becomes a communicable social experience. Expressionism

errs in overlooking this latter character of art while symbolism errs in ignorning the necessary role of the specific aesthetic surface of the art-experience and the quick non-mediated way it refers to universal meanings through the generic signs that lie embedded in it. Thus art is both individual and universal, and both immediate intuition and some implicit intellectuality are involved in its creation and appreciation. Our common experience certifies these balanced views regarding art and our theory has only proved its soundness and freedom from arbitrariness by admitting them and subsuming them under a higher principle so as to treat them as consequences of the theory. Another consequence of our theory is also upheld by common observation. The attitudes of the artist expressed in good art are purified of their blind subjective involvement and appear more lucid, tranquil and objective, while the beholder of art enjoys them as objects of contemplation instead of suffering them as natural or personal emotions. Yet this contemplation of emotions is not as abstract and impersonal as is found in the study of psychology; there is an element in it of the specific feel of the emotional quality, an individual relish of it. These two moments in art-experience are well recognised and respectively called aesthetic disinterestedness or distance and aesthetic sympathy.[4] That somehow the two opposites are reconciled in art-experience is felt by all impartial observers and only an abstract theorist emphasises one of these at the cost of the other. Edward Bullough observed long ago (1912) that the emotions expressed in art should neither be under-distanced nor over-distanced. We can understand this situation in terms of our theory if we consider this to be the consequence of what we have seen to be integral to our concept of art, *viz.*, the balance of the specific content against the generic form of art. For, as may be readily admitted, the specific content of art, the aesthetic surface, excites our raw feelings, while the generic form, the intelligible

[4] A discussion of these in the light of the Indian theory of art-enjoyment has been attempted by the author in an article, "Theory of Rasa", published in the *Journal of Aesthetics and Art-Criticism*, Dec. 1952, and subsequently included in his *Studies in Comparative Aesthetics*. The Indian concept of *rasa* or artistic relish combines the two apparently conflicting notions about art, *viz.*, that it is a product of sympathy and a feast of emotions, and that it arises from detached contemplation of emotions and so is an intellectual activity in the main.

depth-meaning, stir up our reflection and work for aesthetic distance. Thus, as observed by many aesthetic thinkers, in art form overcomes and controls the chaos of content and so does ordering intellect the excitement.

But most of these thinkers, like Hegel, Schiller, and Croce, put a little more emphasis on the formal and intelligible aspect than on the other and see in art an annihilation of content and mitigation of passions, while a few, like Plato, Tolstoy, Gentile and the existentialists, in various manners and degrees make the opposite mistake. The concept of art that follows from our basic theory is the dynamic and critical balance between the two contrasting movements. Thus our theory, while claiming to be about art as we generally know it, is also about art as we ought to know it. Like any serious theory or definition it is both descriptive and normative in nature. A serious theory or definition must not be about a thing known only to the theorist, nor can it possibly satisfy all the different conflicting notions that men held of the thing defined or theorised about. It must steer a middle course and seek to show, as far as possible, the notions conflicting with it to be but the result of some one-sided stress on some aspect of truth. With regard to our concept of art that it is a dynamic balance of the two opposite moments, form-intelligence and content-excitement, we claim that it is readily acceptable to a large majority of unprejudiced observers, and we account for the divergence of a class of people from us on this point by their ethical prejudice against sense-matter and excitement, which leads them to consider only those instances of art as standard where this element is superseded by its opposite. Thus the rationalists and purists saw in art the triumph of order and intelligence over chaotic sense-material and passion. But then, some purists, for instance, Plato, do not see this intellectual element in most art, partly because they include in art the obviously exciting stuff where this element is absent and which we reject as bad art, and partly because they fail to discern this intellectual element in most art where it operates very subtly. So they condemn art most unjustly as an exciter of passions. Plato recommended only severely expurgated editions of Homer and only such subject-matter and styles in arts as are conducive to moral perfection. But we find his proposals, if acted upon, would result in bad art or at best bathos because

of the lack therein of tension between stimulation and repose. Such a collapse of tension and consequential flatness characterise those instances of art where the moment of immediacy and excitement associated with the content, is not allowed to contend in a drawn battle with its adversary but is easily overcome by the latter or, as in didactic poetry or philosophical discourses in verse, is not presented at all and the adversary enjoys a quiet walk-over.

Now, there is a third group of people who also do not perceive this balanced tension or reconciliation of opposite moments in art and who are also moralists. But they differ from the two groups mentioned above in this that they find the element of immediacy and feeling associated with the content of art to be immensely good for moral and social health. The modern existentialist thinkers on art also support art precisely for that character for which the rationalists condemn it. From our standpoint we regard this ideal of art as idiosyncratic and art-work, to the extent it illustrates this ideal, such as Joyce's *Ulysses*, Dostoevsky's *Crime and Punishment*, Mrs. Virginia Woolf's *To the Lighthouse* and *The Waves* or some of the novels of Sartre, as inartistic. The more these authors concentrate on the moment of aesthetic surface and immediacy and neglect the universal forms or intellectual structures, the more do their works become individualistic and chaotic. Lacking the binding force of the intelligible form, they explode and spread out as it were, and since the intelligible form is intimately connected with the universality or communicability of art in a society with particular culture and frame-work of conventional signs and ideas, these works become subjective. They may be very moving indeed to the author and his coterie; to others they appear to be dull and bizarre. This is particularly observed with regard to the products of schools of art like symbolism, cubism, dadaism, surrealism and the like. An artist, we believe, must have a minimum sense of form and sociality in order that his work may attain communicability without which it is a mute and worthless piece. When Tolstoy praised art for its emotional quality, because the beholders while they share the particular emotions embodied in the art-work feel a kind of unity running through them, he had in his mind a kind of art that has a pervasive appeal and an artist who is intellectually and temperamentally one of

his society. Art can unite peoples of a race or society through a concentration on feelings only when the common language of feelings belonging to that race or society informs it, or in other words, when it expresses through the generic signs and symbols of the particular peoples their commonly shared feelings. Great art, like that of Shakespeare or Tolstoy himself, really unites almost all civilised mankind through the emotional attitudes expressed in it and not merely those of a particular race or culture. This happens partly because of the highly comprehensive and representative character of the personalities of the authors concerned who, while expressing what they felt most strongly, also express the universal dispositions of man. This they can do chiefly because of their intellectual knowledge and social sympathy by means of which they can distinguish what is purely individual from what is of universal significance in feelings and attitudes and their associated objects, incidents and ideas. This is how we resolve the issue between personality and impersonality in art. The artist is partly natural and partly assumes deliberately a social mind though at the same time he manages to strike a personal and sincere note in his work which must not appear to be either indifferent or artificial. The artist appears to be an individual presenting his own attitude to us but we accept him as one of us and find in his work an expression of our own minds. Artistic individuality and originality consist not in eccentricity but in this social character by virtue of which art becomes an individual expression of the social mind. So art, even when considered as an expression of feelings, must have some intelligible form and social reference. We, however, believe that good art is defined neither by the contextualist moment of form alone nor by the isolationist moment of content alone but by a critically maintained dynamic tension between the two.[5] The important views of art that conflict with ours are thus accounted for and judged from our standpoint. They

[5] See in this connection M. Rader "Isolationist and Contextualist aesthetics : Conflict and Resolution", (*Journal of Philosophy*, July 17, 1947). He holds that the universal essence and the specific image are but two components of art-experience which is a relational whole of these. Indian aesthetics resolves this conflict in terms of the concept of *Sadharanikarana* meaning generalisation of the feelings and attitudes expressed in art. See *Kavyaprakasa* of Manmata, Chap IV: 28, and *Abhinavabharati* of Abhinavagupta, VI: 34. 28.

are shown to be results of prejudiced and incomplete observation of the partial truths they severally embody and depend on for their popularity. They are included and mutually reconciled as aspects of a higher and more comprehensive truth.

7. *The ironical theory of art and our theory*

Whatever we have said above may seem to go in favour of the ironical theory of art that conceives the dynamic tension and balance of opposites as evidence of the mastery of the artist and as the end of good art. But we have already explained why this tension and balance are required in art and how the enjoyment of these features and the masterful skill are only incidental to the chief enjoyment of art which consists in consciously treating an illusory world as if it is real and so delighting in the sense of creativity involved in this activity. Enjoyment of a mere skill cannot amount to an artistic delight which appears *prima facie* to be richer and more profound. Moreover, the delight of art is not so abstract as the appreciation of a balancing skill, however subtle and delicate the latter might be, for it includes a pleasure taken in the emotions depicted in it. These emotions, as we have seen before, though not suffered blindly, like natural and personal ones, with loss of critical reflection on them, are yet not for that reason treated as cognitive objects. They are neither under-distanced nor over-distanced and are intelligently relished. Art is not as disinterested as it is often thought to be. Tolstoy and others who believe in an affective theory of art are partly right in their insight and contention. This intelligent relish of the emotional qualities of art is a consequence of our original concept of art. For, an illusion cannot be held as real, unless it has a flavour of the real and the real world we know is dyed with feelings and emotions we feel in its presence just as it is with colour we sense in it. The real world affects us with pleasure and pain, love and hatred, fear and courage, and so many other feelings and attitudes, and we have all these depicted in art which presents a semblance of reality. Of course, they suffer a formal change in the process of transportation. In art they are awakened in the mind by the indirect process of suggestion, the objects and incidents usually and respectively associated with them in the world are depicted to suggest them to the mind. There is thus an objectification and de-individua-

tion of feelings in art, they are dislodged at once from the natural objects that arouse them and the minds which feel them and so float in the art-world as ideal contents. This results in aesthetic distance of the feelings and this is required for the maintenance of the overall illusory character of the art-world. But the other side of this complex situation must not be overlooked. The feelings and emotions, and also the objects and incidents suggesting them, are recognised as belonging originally to the real world and they are relished with intelligent awareness about them, and this helps us to imagine the illusory art-world as if it is real. Since, as we believe, aesthetic enjoyment essentially arises from this latter activity which is supported by the relish of feelings and emotions depicted in art, this relish is an element of the aesthetic enjoyment. The latter, therefore, is not as abstract as an appreciation of a skill. The art-object and the art-enjoyment respectively contain an element of skill and of pleasure taken in the latter, but they are not essentially aesthetic characters, so that an excessive attention to this aspect of art either by the author or by the appreciator would be inartistic by our standards. We believe, this is also the verdict of the majority of artists and art-critics and so our definition or standard of art is not arbitrary. Art is obviously not natural but an expression of human ingenuity, as our basic concept of it in terms of conscious illusionism would suggest, yet it is not so much a matter of mere form or technique as of an awareness of the real world, a sense of life with its rich variety and wonder. For the illusion deliberately entertained in art is the illusion of the real world and life. Though the original and essential artistic enjoyment consists in the imaginative delight that the very process of conscious illusionism or elaborate feigning offers the mind, nonetheless an interest in the world and human life is a natural corollary and a substantial accompaniment of this enjoyment which is enriched and diversified by it as is the principal note in a harp by its overtones. The appreciation of the balancing feat in art is one of the many overtones and not even a very major one. The ironical theory, therefore, confuses a minor element of the total aesthetic object and enjoyment with a principal one.

8. *Art as making follows from our theory*

We have thus seen how our theory comprehends the partial

truths of several other theories and concepts about art and corrects their mistakes. We will now see how it does the same with respect to the concept of art as making. Since it makes art a symbolic expression or significant form with a social appeal, it follows that it must not only be an internal or ideal expression but also an external or physical one. So naturalistic expression or fixing the mental images in a medium to make them available to other minds is a natural accompaniment of the original artistic impulse which is to have an illusion in such a way that it may be enjoyed as real. The artist wants to share his essential enjoyment with others and the beholder too wants to do the same. This communicativeness of art helps the semblance of reality that the illusion must have in art-experience as we noticed before, and it mixes with this essential aesthetic value another which may be called sociability. But to realise these two values or interests the artist is led to a further activity and enjoyment peculiar to it, *viz.*, that related to the making of a physical object. The Greeks and the British philosopher Alexander (and in fact all classical and neo-classical thinkers) have put too much emphasis on this making or constructive side of art which they think is central to aesthetic activity, while Croce goes to the other extreme and makes it an extra-aesthetic activity subsequent to the artistic one proper.[6] But as Bosanquet[7] and many others have observed, the process of embodiment of the psychical art-object in a physical medium is integral to artistic work which is thus richer and more inclusive than mere imaging forth of the art-object in the mind. This making of an object has its own peculiar joy which is naturally associated with the pleasure of internal expression and symbolisation. Thus the art-object is a 'concrete significant form' as one aesthetician calls it.[8] The medium offers a challenge to the artist who tames and exploits it, so to say, and the particular properties of the medium used

[6] Croce disregards the external or physical embodiment of art because art for him is the imaginative expression of the spirit that is free, while in the making of a physical object the spirit "suffers but does not produce" and practical and moral considerations enter into it. See Croce's *Aesthetics* (trans. by D. Ainslie, 1909), pp. 5-6, 116. Alexander criticises Croce's view in his *Beauty and Other forms of Value* (1933), pp. 57, 133.

[7] See his essay, "Croce's Aesthetic", in *Mind*, XXXII, pp. 214-15.

[8] M. C. Nahm in his essay "Structure and the Judgment of Art": *Journal of Philosophy*, (Dec. 2, 1948).

affect, to some extent, the process of artistic imagination. The perceiver reconstructs in imagination much of the maker's original constructive processes and enjoys through sympathy the latter's peculiar enjoyment associated with this activity. However, Alexander goes too far when he declares aesthetic impulse to be an outgrowth of man's instinct for constructiveness. He, we believe, confuses what is a natural accompaniment of art-impulse with the original impulse itself and what is an emotional variant or ingredient of art with the constant and dominant emotional quality or key-note of art. Croce, on the other hand, in disregarding the external and constructive aspect of art in favour of its internal expressive side, has failed not only to do justice to a natural ingredient of art but also to account for the universality of art as it is realised in practice. He has spoken of some "physical beauty" or "stimulus" and of "reproduction" of artist's experiences through it to account for this universality which he accepts as a fact. One has to recognise the concrete work of art as an embodiment of the intelligible forms and as signs for the facts which normally in actual life excite certain emotional attitudes and which therefore function as signals for these attidues. The individual or existential character of the art-work expresses the individual aesthetic surface of the internal art-object while the forms embodied in it express the universal intelligible aspect or moment of it. Thus a comprehensive view of art, such as we seek here to build up, includes the various apparently conflicting and exclusive views like those of expression, symbolisation and making.

9. *The theories of play and pleasure are comprehended by our theory*

Let us now see how our theory may assimilate the elements of truth that are in two other prevalent theories of art, *viz.*, those of play and pleasure. The play theory, variously conceived by Schiller, Spencer and others, emphasises the aspect of dissociation of the aesthetic activity from our immediate practical needs and purposes and high-lights the peculiar enjoyment in it that is free from any bio-social interest. The play theory, as developed by Konrad Lange[9], comes apparently close to our

[9] Konrad Lange, the German aesthetician whose theory is not much known to the English-speaking world. A brief account of his theory is given in the Earl of Listowel's *A Critical History of Modern Aesthetics* (1933).

own as it makes oscillation between our desire to sustain an illusion and the opposite one to break it up the core of art and the spring of aesthetic pleasure. We admit that artistic dissociation is a peculiar feature of art and that the essence of aesthetic enjoyment comes from the play of imagination that holds an illusion in a critical state of balance against disillusionment. But we have also noticed how in order that the illusion may be so maintained it has to be judiciously built up with materials from reality so that it may have a semblance of reality without appearing at the same time to be a part of reality. This subtle relation of art with reality or this peculiar transformation of nature into art has been ignored by the play-theorists who have therefore failed to account for many other commonly accepted features of art such as its aspects of communicability, expression, symbolisation and making. We have found these features explainable as natural consequences of the original aesthetic activity which is a play of imagination, and so have included them in our total conception of art built up by the essential or core idea of imaginative play and its natural ingredients. But the play-theory, by virtue of its one-sided emphasis on some particular character of art, becomes exclusive of these other features and consequently abstract and untrue. It does not see that play is not interested in the making of a permanent object and communicating by its means some experiential content that expresses the artist's mind to other minds through some socially accepted signs embodied in the object. But art is interested in this and we have seen how this interest is linked up with the essential interest of art, *viz.*, an imaginative play consisting in balancing of an elaborate illusion against the forces of disillusionment.

Similarly defective is the pleasure theory of art that finds art as essentially affording "the maximum of stimulation with the minimum of fatigue or waste" (Grant Allen) and accounts for the social appeal of art in terms of the universal pleasurable objects that art depicts and excites in us with the greatest economy of means. It makes an element of art an all-important principle and finds itself unable to include as even its corollaries some undeniable notions about art such as that it is essentially distinct from other pleasurable activities like feasting or religious ecstasy, that it may be painful as a tragedy ordinarily appears to be, that

it expresses and relieves one's inner feelings and emotions and is interested in the communication of some experiences to others and also in the making of a physical object. The pleasure of imaginative play, we think, is essential to art and is its chief end, while some other kinds of pleasure, including that ordinary sensible kind of the pleasure-theorist, are but natural consequences that follow from the original impulse for imaginative play and constitute the full aesthetic experience.

This rich and final experience is dominated by its key-note, the imaginative play with illusion and reality, while the other elements serve it as necessary corollaries do a theorem in geometry or ministers and their secretaries do a king in a monarchical system of government. They are subordinate but are required by the principal for bringing out its full significance or effect and so they, together with their mainspring, make a concrete whole. The latter is the given reality we start with and analyse into its elements. The art-object and art-enjoyment are thus seen to be the result of a particular principle, *viz.*, the imaginative activity engaged in balancing an illusion against disillusionment, and we have sought the full meaning of this key principle through a number of other principles which serve it in constituting full-fledged aesthetic experience. An analysis of this experience will detect these various principles and relate them to a main generating principle in terms of which, then, art is initially defined. The correctness and value of this analysis will be judged *firstly*, by the internal consistency and cohesion of elements it marks out and relates through the key-principle it posits at the outset and, *secondly*, by the truth or general acceptability of these elements. So if we have succeeded here in bringing together a good number of commonly admitted elements of art under a common principle, which may itself be recognisable as at least a plausible one, our analysis or theory may be deemed useful and our labours fruitful. The business of an art-theorist is not to propose quiet a novel and exclusive meaning of art, for that would create nothing but confusion in the minds of most readers who want to understand more clearly what they mean by art. The theorist should therefore keep in his mind the essential and universal meaning and instances of art and then analyse the concept to bring out its various elements and their relations. The theory will be thus descriptive in the main

and prescriptive so far as it will assert a certain concept of art to be universally acceptable and reject notions conflicting with this concept in various degrees as either falsehoods or half-truths. We have sought to offer here a theory which we believe best expresses the universal notion about art and may serve as a useful criterion for judging aesthetic values of art-works.

10. *Metaphysical consequence of our theory of art*

There is a tradition both in the East and in the West of raising metaphysical structures on the basis of an aesthetical theory. Metaphysics is after all a projection of thought, whether explicit or implicit, on the analogy of some phenomenal experience which is said to illustrate the transcendent reality. This reality is either dogmatically claimed to be independently and directly knowable or merely postulated as an analogical construct. An aesthetical theory, empirically arrived at through an analysis of art-experience, may serve as a key-idea for a suitable metaphysics. In the West, the Christian idea of God as a free creator of the world out of nothing has its implicit and psychological, if not explicitly rational, origin in the notion of an artist being endowed with imagination, an originating faculty, by means of which he calls up images, ideas, feelings and emotional attitudes just as he pleases. In Indian philosophy too God is conceived as one who creates this world out of his love of sport (*lila*) and enjoys it aesthetically.[10] The rational speculation of the theistic metaphysicists, however, in both the realms of thought, has proceeded in the reverse direction. God as a free creator is axiomatically and, the artist is conceived analogically, as one gifted with divine power, sovereign imagination or inspiration. In the West it is Plato[11] who may be said to be the originator of this metaphysical analogy. His cosmic demiurge, however, is a little different from the later Christian God,

[10] The supreme Reality is spoken of as essentially of the nature of aesthetic relish (*rasa*) in *Taittiriya* Upanishad (VII) while *Aitareya* Upanishad speaks of God creating the world like an art-object and of the artists as imitating God in their artistic activity which is, therefore, a kind of worship of God and a means of self-realisation. Some Indian aestheticians compare the aesthetic experience to the experience of the Brahma; for instance, Abhinavagupta in *Dhvanyaloka-lochana* (2,4), and Visvanatha in *Sahityadarpana* (3,35).

[11] See his *The Sophist*, 235, 59.

for while the former shapes things out of pre-existing materials (the archetypes) in a deterministic manner, the latter creates miraculously out of nothing. So his idea of mimesis or making of art-objects is deterministic while the corresponding Christian idea[12] is free. The Indian concept is very like the latter one.[13] We see that these rationally conceived aesthetical theories of art-production are metaphysically oriented while, as we believe, the theistic metaphysics itself, which seems to inspire these theories on the conscious level, has its hidden roots in the perception of the aesthetic situation, that is, of the artist's imaginative power, and is therefore aesthetically oriented.

We will now sketch the barest outline of a metaphysic on the analogy of our aesthetical theory presented in the foregoing pages.[14] We conceive the ultimate reality as a cosmic spirit which is artistic in nature and so delights in projecting in imagination a world of systematic sensible objects and taking it as real. Emotional attitudes are associated with the objects which become signals of them and they are undergone by this cosmic spirit as if they are excited in it by external objects. Now the two moments of the artistic process or conscious illusionism observed before have to be distinguished by us and the cosmic spirit must be conceived as keeping, a dynamic balance between them, for this is the principal feature of the aesthetic activity and the mainspring of aesthetic delight, the other things being consequential and subordinate to it. So the spirit must be maintaining in critical and active balance its awareness of the world with the emotional influences as but its own making against the imputed reality of them. It is a subtle process of self-deception or feigning with two opposing moments, one realistic and another illusionistic. Now to realise this balanced

[12] See Jacques Maritain: *Art and Scholasticism* (1946), pp. 5, 49.

[13] *Sukranitisara* (IV, 170-71) speaks of the creative process in art as a contemplative vision (*yoga-dhyana*) similar to the *actus primus* of the Scholastics. See A. K. Coomeraswamy: *Figures of Speech or Figures of Thought* (1946) Chap. X. Rabindranath Tagore also speaks similarly of artistic activity; see, his *Panchabhuta* (1st edition), p. 171.

[14] This metaphysic is sketched in the author's *The Philosophy of Science* (1954) Chap. XI, *Studies in Comparative Aesthetics* (1953), *Aesthetical Metaphysics* (*Visva-Bharati Quarterly*, Autumn, 1956), & *Indian Personalism* (*Personalist*, Summer 1957). It is elaborated in the author's *Elements of Scientific Philosophy* (in Press), Chap 4.

aesthetic effect the cosmic spirit creates in imagination individual minds, such as human minds (besides which there are animal minds and possibly many other types of minds in other realms) which take the world to be real and are really affected by it. The spirit creates them with the same purpose as the novelist or the dramatist does fictitious characters. The world is perceived through their senses and various feelings and emotions are felt through their hearts; in other words, the cosmic spirit enjoys the world vicariously through his sentient creatures. In this manner of approach to sensible and emotional qualities the cosmic spirit achieves, on the one hand, sympathetic identification with the characters and so the realistic moment of the aesthetic attitude, and, on the other, the sense that all these qualities are but seemingly and not really sensed and felt for the characters are but the creatures of its own imagination. This is the way one might philosophically conceive the creation of the world and individual minds and understand why there are all sorts of apparently incompatible things here like light and darkness, joy and pain, good and evil, beauty and ugliness. The cosmic mind enjoys all these from behind the individual minds and so there is nothing really painful, evil or ugly in its aesthetic experience which is all joyous and beautiful.[15]

This divine and beatific vision of the world may be somewhat faintly realised even by an individual mind if he believes in this metaphysics, which is essentially theistic, and disciplines his life and thought accordingly. He has to treat this world as a stage and his own life as a fictitious role in the cosmic drama, and so he must not take anything in the world and its ways seriously but enjoy them disinterestedly as one does the art-world. He must also imagine how the one cosmic mind links up the other minds with his as the dramatist's mind does all characters which are his spiritual off-springs, so to say. So he must give up all narrow self-interest and separatism. Thus this aesthetical metaphysic has its moral and religious sides. It admits our observed moral and religious tendencies and explains them in terms of some affinity of our minds with their divine author, who

[15] The Supreme Reality as a spirit dwelling in everything and particularly in every sentient being and enjoying the experiences of the latter is found in the Upanishad. See, *e.g.*, *Brihadaranyaka* III, 7; *Katha*, I, iii, 3-4.

is therefore not wholly transcendent to the former. The divine origin of our mind is the basis of our higher and nobler aspirations and achievement in art, philosophy, science and morals, in each of which discipline we go beyond our immediate biophysical interests in search of some universal principle or vision. We have often intuitions too of our immortal creator whom we serve by our humble wordly life. He enjoys from behind us our joys and sufferings, hopes and fears and all the other passions that move and shake us. Thus the aesthetically oriented metaphysics of ours explains, and is confirmed by, many of the intuitions of the mystical sort that many of us have in our rare lucid moments when we seem to see through our cloud of sensations and emotions their substratum, our mind, and their original cause, the cosmic spirit, and their purpose, the aesthetic enjoyment of them. In our aesthetical pursuit we get a foretaste of this divine ecstasy most naturally. So art, as we conceive it is explained by our metaphysics. This is understandable for the metaphysics is modelled on the experience of art. Over and above, our aesthetical metaphysics also explains our other activities and findings in other fields of culture noted above such as science, philosophy, morality and religion, in each of which we critically reflect upon some portion of obvious experience in order to trace its origin and deeper significance. These disciplines are the result of an implicit process of inwardising of the human mind that turns its gaze from outward to within in search of its higher self.[16] The ultimate questions of each of these disciplines can receive their respective answers only when man realises his real self, the cosmic spirit that created the world for its aesthetic pleasure. The scientific, philosophical, moral and religious enquiries lead us onwards to the seat of the cosmic spirit or God who is the author of all we experience and so holds the key to every mystery of this world.

We see then that the marvellous regularity and order of the world may well be considered as due to the creative urge of the cosmic spirit that must have systematic experience in order to enjoy an illusion of reality. Individual minds are created to

[16] See *Katha* Upanishad II, iv, 1, where it is said that the cosmic spirit in its creative urge looked forward but the wise men look backwards in search of their real self and immortality.

witness the world in various perspectives, both spatio-temporal and mental, and suffer it variously, in order that this illusion of reality may be achieved. For, as explained before, the individual minds are created so as to take the world for reality and the cosmic spirit both enjoys through them this sense of reality and balances it against disillusionment caused by its awareness of the fictitious nature of these minds and their experiences. This is the main metaphysical theory we build on the similitude of our aesthetical findings. It has possibly gaps and loose ends like any other metaphysical scheme but it is valuable in offering us a picture, howsoever faint and sketchy, of the ultimate order of being and, so, in guiding to some extent our enquiries in science and philosophy and cultural activities like morality and religion, none of which can proceed without some *a priori* notions or directions. Some metaphysical framework of ideas is indispensable for us in these intellectual and spiritual search-works, and the best we can do about it is to construct it on the analogy of some key-idea found successful in some area of experience. We must hold it as a methodological postulate or a tentative principle and go on employing it and testing its worth. The present aesthetically oriented metaphysics is offered in that spirit and we trust it will prove a useful conceptual framework for systematising our experience and findings in various fields of our life and study.

Post-Script :

I must express my gratitude to my revered teacher Prof. Taraknath Sen for his kind perusal of this paper. He points out that the concept of art as conscious feigning is a commonplace of Renaissance and neo-classical criticism. He is reminded of Plato's description, in *The Sophist*, of the painting of a house as "a dream of a house for those who are awake". My reply to this is that my theory is not original in conception, and perhaps no theory of art that claims to be true can be original in that sense, but it may be original in execution in that I have elaborated and developed it in order that it may include many rival theories as partial truths. Another observation about my theory he makes is that it may be included under the theory of the interpenetration of opposites set forth by Coleridge in *Biographia Literaria* (Chap. 14). The ironical theory of art,

which we have criticised here, "minus its rather misleading nomenclature and minus its version of the aesthetic pleasure", might as well serve for our central theory. For after all the interplay of illusion and reality is a kind of interplay of opposites. I beg to submit that this other theory is too general a principle to make any significant difference to the ordinary artistic situation. To the question how may we interpret a good philosophical poem like, say, Wordsworth's, "The World is too much with us" or "Tintern Abbey", which no theorist will like to exclude from standard examples of good art, I reply that the statement in each poem may be treated as a monologue and, so, the situation described or the message delivered be judged as connected with an illusory world. Our failure to do this leads to a cognitive response and judgments of truth and falsity which mar the aesthetic relish of these poems. The world-picture presented by such a philosophical poem is entertained as real while knowing at the same time that it is a picture drawn by a poet who is regarded as a dramatic character rather than a philosopher. Hence there is an essential irony or tension in such a poem which would otherwies fall flat or produce bathos and cease to be poetical.

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ABBREVIATIONS USED IN THE LIST :

V. B. Q.=Visva-Bharati Quarterly.
C. R.=Calcutta Review.
P. P. R.=Philosophy and Phenomenological Research.
J. A. A. C.=Journal of Aesthetics and Art Criticism.
P. B.=Prabuddha Bharat.
B. R. M. I. C.=Bulletin of Ramkrishna Mission Institute of Culture.
J. P. A.=Journal of Philosophical Association.
P. Q.=Philosophical Quarterly.
I. R.=Indian Review.