REALITY AND PHYSICS SOME ASPECTS

D. S. Kothari, Delhi

The theory of relativity, followed by quantum mechanics, represents a radical departure from classical Newtonian physics. It marks a big, and totally unexpected, 'Jump', as opposed to progressive refinement of older theories. For Newton, his laws of motion required the existence of an *absolute*, unlimited space and an absolute time. Absolute space existed not only to serve as a container for things, but also for itself. Absolute space, and the same applied to time, was a reality "bound up with the inner-most essence of the Newtonian conception of the world. Space for him is not an empty form, but the organ by means of which God works as omnipresent in the world, and at the same time, immediately perceives the conditions of things. It is an "unlimited and homogeneous sensorium (of God)." (Harald Hoeffding, *A History of Modern Philosophy Vol.* II, p. 411, Dover Publication). Also in Newton's view the observed universe must necessarily be imperfect, and it involves continued activity on the part of God to keep it running harmoniously For instance, according to him, the stability of the solar system against natural plannetary perturbations required intervention by God from time to time.

The dethronement of the Newtonian conception of absolute space and time was greatly facilitated by its confrontation with an entirely different metaphysical and philosophical view of nature. An illuminating discussion of this question has recently been provided by L. S. Fener in his book *Einstein and the Generations of Science* (Basic Books, New York, 1974). The profound impact of the views of Ernst Mach is well-known. To quote Einstein (*Albert Einstein : Philosopher Scientists* : Editor P. A. Schilpp, p. 21) :

"We must not be surprised, therefore, that, so to speak, all physicists of the last century saw in classical mechanics a firm and final foundation for all physics, yes, indeed, for all natural science. It was Ernst Mach, who, in his *History of Mechanics*, shook this dogmatic faith; this book exercised a profound influence upon me in this regard while I was a student. I see Mach's greatness in his incorruptible skepticism and independence; in my younger years, however, Mach's epistemological position also influenced me very greatly, a position which today appears to me to be essentially untenable."

It is noteworthy that Mach was influenced to a considerable degree by Indian philosophic thought. Erwin Schroedinger observes (*My view of the World*, Cambridge University Press (1964), p. 37) : "If, finally, we look back at that idea

of Mach, Avenarius and Schuppe which we outlined earlier on, we shall realize that it comes as near to the orthodox dogma of the *Upaniṣads* as it could possibly do without stating it *expressis verbis.*"

In his *The Analysis of Sensations* (Dover Publications 1959) Mach argues that the two viewpoints—stationary earth, and the Sun and the fixed stars in motion, and its opposite way of looking at the matter are "equally correct and equally well-adapted to their special purposes." But to accept this equivalence is nothing, as he points out, in comparison to the simple truth based on straightforward psychological analysis that the "ego", the "I", is nothing at all but a transitory connexion of changing elements. He says (p. 25) "The ego must be given up. It is partly perception of this fact, partly the fear of it, that has given rise to the many extravagances of pessimism and optimism, and to numerous religious, ascetic, and philosophical absurdities. In the long run we shall not be able to close our eyes to this simple truth, which is the immediate outcome of psychological analysis. We shall then be willing to renounce individual immortality, and not place more value upon the subsidiary elements than upon the principal ones. In this way we shall arrive at a freer and more enlightened view of life, which will preclude the disregard of other egos and the over-estimation of our own."

Mach especially refers to Buddhism. He says (footnote p. 356) : "For thousands of years past Buddhism has been approaching this conception from the practical side." He speaks of "the wonderful story unfolded" in Paul Caru's *Karma, A story of Early Buddhism*, Chicago (1894); also *The Gospel of Buddha* (1894).

There is no problem more mysterious than the mind-body interaction. Modern science has not made it less interactable. On the other hand it has added a new urgency and also a new poignancy. The complementarity approach may open up some new possibilities worth exploring.

Writes Erwin Schrodinger (*My view of the World* pp, 20-22) : "A hundred years ago, perhaps, another man sat on this spot; Like you he was begotten of man and born of women. He felt pain and brief joy as you do. *Was* he someone else ? Was it not you yourself ? What is this Self of yours ?....What clearly intelligible *scientific* meaning can this 'Someone else' really have ?....Looking and thinking in that manner you may suddenly come to see, in a flash, the profound rightness of the basic conviction in *Vedānta*"'what the Brāhmins express in that sacred, mystic formula which is yet really so simple and so clear : *Tat tvam asi*, this is you. Or, again, in such words as 'I am in the east and in the west, I am below and above, I am this whole world'....It is the vision of this truth, of which the individual is seldom conscious in his actions) which underlies all morally valuable activity. It brings a man of nobility not only to risk his life for an end which he recognises or believes to be good, but in rare cases to lay it down in full serenity, even when there is no prospect of saving his own person."

Schrodinger expressed these daring thoughts (certainly so in the western cultural millieu) in his Essay, *Seek for the Road.* He wrote it in 1925 a few months before his discovery of wave mechanics. The Essay was first published with another, what is real ? in 1961, in *My view of the World,* thirty five years after it was written. (The English translation of the German original was published by the cambridge University Press in 1964). It serves to illustrate the profound interest, to the present age of the Indian Upaniṣadic and Buddhist thought.

The radically novel situation in physics with its important philosophical implications is best expressed by Bohr's principle of complementarity. The principle recalls to our mind the insight to which the ancient Indian thinkers were led to in their extra-ordinarily daring search for the relation between man and the universe, between body and soul, the problem of good and evil, and all the varied profound contradictions which underlie human existence. What the seers of the Upanishads sought was in a sense '*an uncompromising reconciliation of uncompromising extremes.*

The logic of complementarity has a special place in Jain philosophy. An oft-quoted dialogue between Lord Mahavira and his favourite disciple Gautama serves to illustrate this (see Nathmal Tatia, *Studies in Jaina Philosophy,* Jain cultural Research Society, Banaras, (1951), pp. 22-23).

"Are the souls, O Lord, eternal or non-eternal ?"

The souls, O Gautama, are eternal in some respect and non-eternal in some respect."

"With what end in view, O Lord, is it said that the souls are eternal in some respect and non-eternal in some respect ?"

"They are eternal, O Gautama, from the view point of substance, and non-eternal from the view point of modes. And with this end in view it is said, O Gautama, that the souls are eternal in some respect and non-eternal in some respect.

"Is the body, O Lord, identical with the soul or is the body different from it."

"The body, O Gautama, is identical with the soul as well as it is different from it."

The logic of *Syādvāda* (*Syād* means 'may be') was formulated by Jain thinkers probably more than two thousand years ago. It should be of great interest, both scientific and ethical, in the modern context. Its relevance to modern statistical concepts has been discussed by P. C. Mahalanobis, and J. B. S. Haldane in *Sāṅkhya,* May 1957.

According to the *Syādvada* schemes every fact of reality should be described in seven ways. These are combinations of affirmation and negation :

(1) Existence, (2) Non-existence, (3) Occurence (successive) or Existence and Non-existence, (4) Inexpressibility or Indeterminateness (5) Inexpressibility as

qualified by Existence, (6) Inexpressibility as qualified by Non-existence, and (7) Inexpressibility as qualified by both Existence, and Non-existence.

Syādvāda asserts that knowledge of reality is possible only by denying the absolutistic attitude.

We may notice that the superposition principle of quantum mechanics provides an illuminating example of the Syādvāda mode of description. Let kets $|a'>$ and $|a''>$ be the different eigenstates of an observable a for a quantum mechanical system. Let $|P> = |a'> + |a''>$. We have the Syādvāda mode of description:

(1) System is in state $|a'>$.

(2) System is not in state $|a''>$ (but in $|a'>$).

(3) System is both in state $|a'>$ and $|a''>$, represented by the mixture $|a'><a'| + |a''><a''|$.

(4) System is in an indeterminate state, (not eigenstate of a) represented by $|P> = |a'> + |a''>$.

(5) System is in an indeterminate state and in state (1) represented by $|P><P| + |a'><a'|$.

(6) System is an indeterminate state and in state (2), represented by $|P><P| + |a''><a''|$.

(7) System is in an indeterminate state and in (3), represented by $|P><P| + |a'><a'| + |a''><a''|$

Syādvāda asserts that a thing is "A", and it is also "not A" and both "A and not A", and so on. It is an exhortation to investigate reality from *all* different possible viewpoints. It is not a doctrine of indifference or passive acceptance of statements and also their negative. It is just the contrary. It demands our ascertaining the conditions, the coordinate frames as it were, under which a thing is "A", the (different) conditions under which it is "not A", conditions under which it can be both "A" and "not A" and so on.

Unlike *Syādvāda*, in Aristotelean logic a thing is either "A" or it is "not A". Here the main concern is an examination of a thing from one particular standpoint, and not from all the different standpoints. A Jain logician may contend that this is a meaningless effort. Any meaningful examination involves more than one standpoint. A thing can never be examined twice from an identical standpoint,

for, if nothing else, at least the two instants of observation are different. Nothing is exactly repeatable. But in asserting this, we ignore the fact that differences between relevant aspects of the two (different) situations may be so small as to be negligible in *practice*. Repeatability is the essence of scientific observation. It is possible to think, but I am not competent to judge, that the *Syādvāda* logic did not particularly encourage quantitative observation. Its emphasis was on philosophic enquiry. We may note at this point that, to begin with, all experience is subjective. How then *objective* knowledge becomes possible ? All experience, everything without exception, is fundamentally a personal, subjective, experience. When you and I look at a tree, there is no conceivable way of determining that my sensation of "green" is the same as yours. That your perception and mine of a given thing is identical has no clear, no objective, meaning. The basic point is that an objective statement is not, and cannot be about one *single* sense impression (say, my sensation of red colour produced by a flower), *but it expresses always some relation between two sense impressions*. My sense impression of red may be or may not be (who knows) different from yours, but irrespective of this we can verify whether two given flowers are of red colour or they are not. This simple example can be readily generalized. The essence of the matter is that objective, communicable statement become possible about *pairs* of some impressions and never about single sense impressions. It is this which eliminates subjectivity from science, eliminates "I", and is the basis of the objectivity of science. "The fact that by comparing pairs communicable, objective statements are possible, has an immense importance because it is the root of speaking and writing, and of the most powerful instrument of thinking, of mathematics." (Max Born, My *Life and my Views,* Chapter Five, "*Symbol and Reality*", (1968), p. 174).

The objectivity of science makes it truly a co-operative enterprise which can be shared by all men, Dogmatism of any kind whatsoever is totally inadmissible in science. Dogmatism is subjective. Its ultimate basis is personal prejudice or belief, not reason. Dogma is personal, science is public. Dogmatism and objectivity are a flagrant contradiction. The cooperative enterprise of science, thanks to its objectivity, has been astonishingly successful, perhaps for more than any other enterprise of man. But the objectivity of science has not been obtained without its price. It imposes a far-reaching limitation.

Objective science by excluding subjectivity cannot, even in principle, deal with our thoughts, feelings, emotions, with subjective experience of any kind. It excludes "I". The exclusion is total. Our feelings—pain, joy, ecstasy; and what not are inherently incapable of unambiguous communication. Even if I succeed in expressing in words some particular feeling or emotional state of mine, there is no proof—there can be no proof—that my words will produce within you feelings identical to mine. Consciousness, mind, soul, "I", or whatever name we may give to subjectivity, or to any aspect of it, has no place in natural science. No considera-

tions of purpose, divine or human, nothing which implies value judgements, can enter the gateway of objective science.

It is apparent that the basic distinction between brain and mind is all important. Brain is a part of the objective world. It can be investigated objectively; and recent development in molecular biology have given valuable knowledge of its structure and functioning. On the other hand, mind is subjective. When, for instance sound waves impinge on our ears, the pressure changes produce electric currents in the nerve fibres which from the ear reach the brain. How do these electric currents in the brain transform in the mind into sensations of sound—into music ; The same applies to other sensations. Science provides no answer to this riddle. Because of its very objectivity science can give no answer to this riddle of all riddles. To quote Sir Chalres Sherrington (*Man on his Nature*, Cambridge University Press (1951), p. 228-257) : "The mental is not examinable as a form of energy. That in brief is the gap which parts psychiatry with physiology.... Thoughts, feelings, and so on are not amenable to energy (matter) concept. They lie outside it. Therefore they lie outside Natural Science.... In some ways this is embarrassing for biology. Biology as its name says is the study of life.... Natural science has studied life to the extent of explaining away life as any radically, separable category of phenomena .... there is no radical scientific difference between living and dead .... But though living is analysable and describable by natural science, that associate of living, thought, escapes and remains refractory to natural science .... Our mental experience is not open to observation through any sense-organ .... Mind, for anything perception can compass, goes therefore in our spatial world more ghostly than a ghost. Invisible, intangible, it is a "thing" not even of outline, it is not a "thing". It remains without sensual confirmation, and remains without it for ever."

What about the interacton between the mind and the body ? The control of the mind over the body is an incontrovertible fact of personal experience. If my mind, my thought, does not determine the movement of the pen in my hand, who is writing this sentence ? Who is responsible for it ? Equally, the influence of the body on the mind is incontrovertible as exemplified by effects of food, and drugs, by neurological experiments, brain injuries, and so on. (W. Penfield has recorded that in some striking cases of brain surgery when the patient was asked not to move the arm when the corresponding area of the cerebra cortex was electrically stimulated, the patient invariably responded by using the other arm to hold it down. What the electrode did to one arm, the patient's will did to the other concluded Penfield).

It may be of interest to recall at this point that John von Neumann explicitly introduced the role of consciousness (mind) in his treatment of the foundations of quantum mechanics (*Mathematical Foundations of Quantum Mechanics*, Chapter VI, English translatio n (1955), Princeton University Press). He postulated that interaction with consciousness was necessary to bring about a "reduction of wave-

packet". This view has been severely criticised by several people, notably Rosenfeld. Leaving aside the question of the reduction of the wave-packet, von Neumann's observations about subjective perception are of great interest. He says : "the subjective perception is a new entity relative to the physical environment and is not reducible to the latter. Indeed, subjective perception leads us into the intellectual inner life of the individual, which is extra-observational by its very nature..... We must divide the world into two parts, the one being the observed system, other the observer. In the former we can follow up all physical processes (in principle at least) arbitrarlly precisely. In the latter, this is meaningless. The boundary between the two is arbitrary to a very large extent.....that this boundary can be pushed arbitrarily deeply into the interior of the body of the actual observer is the content of the principle of psychophysical parallelism—but this does not change the fact that in each method of description the boundary (between body and mind) must be put somewhere....." The views have recently been further expounded and elaborated notably by E. P. Wigner.

What we know about living organisms is not much, but we know enough to be able to conclude that the human body is a "machine". It is so beyond question, it is subject to the laws of physics and chemistry which make no distinction whatsoever whether the atoms are parts of a living body or otherwise. Equally, one cannot deny the incontrovertible direct experience that the motions of his or her body are under his or her control. My body is a "machine", but "I" control its movements. Any other assumption would be unacceptable, unreasonable. Let us assume, as undisputed, the two "facts":—(1) my body is a machine, and (2) its motions are under my control. From these two facts what is the inference we can draw which would not be contradictory to science, not violated its basic axioms of objectivity and autonomy ? The only possible inference, as Schroedinger has stressed, is that every mind that has ever said or felt "I" is the one (if any) who controls the 'motions of the atoms', controls the universe, according to the Laws of Nature.

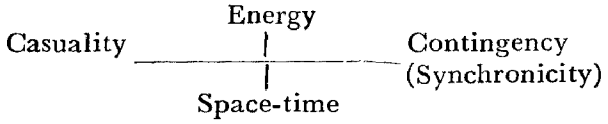
Says Schroedinger *(What is Life* (1948), p. 89*)* : "In itself, the insight is not new. The earliest records to my knowledge date back some 2500 years or more. From the early great Upaniṣads the recognition *Ātman = Brahman* (the persenal self equals the omnipresent, all-comprehending eternal self) was in Indian thought considered, far from being blasphemous, to represent the quintessence of deepest insight into the happenings of the world. Th striving of all the scholars of Vedanta was, after having learnt to pronounce with their lips, really to assimilate in their minds this grandest of all thoughts".

Howsoever strange and paradoxical the complementarity of mind and matter may seem to us, it is in all probability inescapable. What is most important is to investigate—making use of the powerful experimental techniques, and statistical computer aids available today—phenomena suggested by the complementarity

approach. *For example, if mind is not an energy system, direct communication between the two minds need not be ruled out on grounds of any violation of energy laws or casuality.* Again, it would be of interest to know what *mental states* correspond to random thermal fluctuations in the *brain.* This would demand a suppression of all voluntary mental activity so that the "mental noise" corresponding to the cerebral 'thermal noise" could be observed by the subject.

The book, *The interpretation of Nature and the Psyche* (Routledge and Kegan Paul, London (1955) contains two essays, one by C. G. Jung *(Synchronicity, an acausal connecting principle)* and the other by W. Pauli *(The influence of archetypal ideas on the scientific theories of Kepler).* Jung says that the sychronicity principle advanced by him may throw light on the body-soul problem. He says : "The *absolute knowledge* which is characteristic of synchronistic phenomena, a knowledge not mediated by the sense organs, supports the hypothesis of a self-subsistent meaning, or even expresses its existence. Such a form of existence can only be transcendental, since, as the knowledge of future or spatially distant events shows, it is contained in an irrepresentable space-time continuum" (p. 124).

An interesting schematic representation of the physical-psychical situation which Jung presents (after discussion with Pauli) is that synchronicity deals with phenomena that are inexplicable not merely because the cause is unknown, but for them, the "cause is not even thinkable in intellectual terms"



As A. N. Whitehead (*Science and the Modern World,* 1925) has observed : "A scientific realism based on mechanism is conjoined with an unwavering belief in the world of men and of higher animals as being composed of self-determining organisms. This radical inconsistency at the basis of modern thought accounts for much that is half-hearted and wavering in our civilization."

The mind-body problem is as alive as ever.

Karl Popper (*Objective Knowledge, an Evolutionary Approach,* Clarendon Press, Oxford (1972), p. 153) says "Western Philosophy consists mainly of world pictures which are variations of the theme of body-mind dualism and of problems of method connected with them."

Science and objectivity are and must be recognized as inseparable. The cornerstone of the scientific method is the postulate that nature is objective. In other words, the systematic denial that 'true' knowledge can be reached by interpreting phenomena in terms of final causes that is to say, of 'purpose'....It is impossible to escape it (the postulate of objectivity), even provisionally or in a limited area, without departing from the domain of science itself." (Jacques Monod, *Chance and Necessity** (1970). No considerations of purpose, divine or

human, can enter the domain of objective science. The exclusion is complete. Science is objective, not subjective or projective. If we ask : what purpose do the stars in the sky serve ?; the answer of astronomy is : The stars serve no purpose whatsoever. In the realm of science any other answer would be absured. To think of any purpose or goal for the universe (or for any parts of it) is totally alien to science, it is incompatible with it. (*Knoff, New York, 1971).

Any yet deep within us there is some vague feeling beyond doubt, akin to faith, that the universe (with its billions of galaxies, and each galaxy with billions of stars) and human life, has some purpose, some transcendental goal Again, we would be overstepping the bounds of science, and indeed be untrue to science, if we were to believe that "prayers" could influence the course of physical phenomena. Prayers cannot effect or alter material things That is so. Yet, who can assert that in the realm of the mind a "prayer", earnest and heart-felt, is meaningless ? To quote Gandhiji : "Prayer has been the saving of my life. Without it I should have been a lunatic long ago. My autobiography will tell you that I have had my fair share of the bitterest public and private experience. They threw me into temporary despair, but if I was to get rid of it, it was because of prayers....I am indifferent as to the form (of prayer)....I have given my personal testimony. Let every one try and find that, as a result of daily prayer, he adds something new of his life, something with which nothing can be compared." (See also William James, The *Varieties of Religions Experience*, Lecture XIX, Longmans (1919).

Science declares that the universe, including man's life, has no purpose, but the "I" certainly feels otherwise. For the "I", purpose (teleonomy) is everything; without it there is nothing. What is the bridge, the connecting link between objective science and subjective "I" ? (How to resolve the flagrant contradiction between the determinism that science predicates and the freedom of the will which the "I" directly experiences ?). It raises the deepest of all questions : What is "I" ? How does the "I" (mind, consciousness) interact with the body ? There is no solution to this profoundest of all "mysteries." (We are no nearer to an understanding of the mystery than the insight and wisdom provided by the Upanishads, as emphasized by Erwin Schroedinger in his remarkable book, *My view of the World* (1964). The current developments in quantum physics, cybernetics, and molecular biology emphasize that-if anything-the "mystery" is far deeper than ever thought before. It is one thing to recognize that we have no "solution", but altogether another thing to cavalierly assert (as some people do) that there is no "problem", no "mystery." The distinction is important. Otherwise, there is a real danger that science which man has created, and which is mankind's greatest intellectual and most fruitful enterprise, may, in the end, smother his spirit instead of enlarging and enriching it.

लेखसार

वास्तविकता और भौतिकी : कुछ पहलू

डी० एस० कोठारी, दिल्ली

न्यूटन की यांत्रिकी में ईश्वरवाद के साथ परम आकाश और काल की मान्यता रही है। इस आधार पर स्थूल जगत की व्याख्या भी की जाती रही। लेकिन मैश और आइन्स्टीन के सापेक्षतावाद और क्वान्टम यांत्रिकी ने इस मान्यता में आमूल परिवर्तन कर दिया। ये नई मान्यतायें भारतीय उपनिषदों के समरूप ठहरती हैं।

वास्तव में, शरीर और मन का सम्बन्ध एक ऐसा क्षेत्र है जिसमें विज्ञान अभी कोई विशेष व्याख्या नहीं दे पाई है। अरविन श्रोडिन्जर ने अपनी एक पुस्तक में 'तत्त्वमसि' के सम्बन्ध में विचार प्रकट किये हैं और उसके आधार पर तरंग यांत्रिकी का विकास किया। बोहर का पूरकवाद भी उपनिषदों के मानव और विश्व, आत्मा और शरीर आदि के सम्बन्धों पर आधारित है। यह पूरकवाद जैन दर्शन में भी विशेष महत्व का है जब भगवान् महावीर कहते हैं कि यह आत्मा द्रव्य दृष्टि से अनादि-अनन्त है और भाव दृष्टि से सादिसान्त है। इसी प्रकार स्याद्वाद का सिद्धान्त भी आज के वैज्ञानिक और नैतिक धरातल पर महत्वपूर्ण बन गया है। इसके अनुसार वस्तु का पूर्ण विवरण सात रूपों में किया जा सकता है। इस निरूपण का निदर्शन क्वान्टम यांत्रिकी के अध्यारोपण सिद्धान्त से होता है। यहाँ भी स्याद्वाद के समान सन्दर्भ विन्दुओं को महत्व दिया जाता है। यह दृष्टिकोण अरस्तू के एकान्तवादी तर्कशास्त्र से अधिक व्यापक और व्यावहारिक है। यह सचमुच ही आश्चर्य की बात है कि स्याद्वाद केवल दार्शनिक क्षेत्र मे ही क्यों सीमित रह गया ? इसने परिमाणात्मक विकास क्यों नहीं किया ? आधुनिक विज्ञान की वस्तुनिष्ठता का मूल यह स्याद्वादी दृष्टिकोण ही है। इसमें व्यक्तिनिष्ठता का समावेश नहीं हो सकता।

इसको समझने के लिये मन और मस्तिष्क का अन्तर अत्यन्त महत्वपूर्ण है। मस्तिष्क वस्तुनिष्ठ होता है। इसके विषय में विज्ञान ने पर्याप्त जानकारी दी है। इसके विपरीत, मन व्यक्तिनिष्ठ होता है। ध्वनि की लहरियां मस्तिष्क में विद्युत् प्रवाह के रूप में आती हैं। यह मन में संगीत की अनुभूति कैसे उत्पन्न करता है ? इस प्रश्न का उत्तर विज्ञान ने अभी तक नहीं दिया है। वस्तुतः मन न तो ऊर्जा के रूप में और न ही कण के रूप में समझा जा सका है। यह जीव-विज्ञान के क्षेत्र से बाहर की वस्तु है। फिर मन और शरीर का संबन्ध क्या है ? फिर भी हम जानते हैं कि ये दोनों एक-दूसरे को निर्विवाद रूप से प्रभावित करते हैं। जोन-वान न्यूमैन ने मन को चेतना का पर्यायवाची माना है। व्यक्तिनिष्ठ ज्ञान हमें जीवन के अन्तरंग की ओर ले जाता है। इस आधार पर हम विश्व को दो भागों में विभाजित कर सकते हैं—दृश्य और दृष्टा। इन दोनों के मध्य की सीमारेखा पर्याप्त स्वैच्छिक और अस्पष्ट है।

हमारा शरीर एक यन्त्र है पर उसका नियन्त्रण 'मैं" करता है। इन दो तथ्यों से "मैं" का प्राकृतिक अस्तित्व सिद्ध होता है। श्रोडिन्जर के अनुसार, यही "मैं" भारतीय उपनिषद् और वेदान्त का मूल है। मन और शरीर के इस नियामक संबंध की वैज्ञानिक दृष्टि से खोज आवश्यक है क्योंकि यह पूरकवाद पर आधारित है। जंग और पाउली आदि ने इस विषय पर विचार तो किया है, पर उनके निष्कर्ष समस्यात्मक हैं, समाधानपरक नहीं।

विज्ञान कहता है—इस विश्व और मानव जीवन का कोई उद्देश्य नहीं है। लेकिन हमारा "मैं" ठीक इससे विपरीत ही कहता है। इस विश्व और "मैं" का बन्धन-सेतु क्या है ? वस्तुतः यहाँ मूलभूत प्रश्न "मैं" का है जो विश्व और जीवन से अधिक मौलिक और रहस्य मय है। विज्ञान आज भी इस समस्या के समाधान में उलझा हुआ है। उसके पास "मैं" के लिये कोई उत्तर नहीं है, पर वह इसे अपनी समस्या तो मानता ही है।