SOME CONCEPTIONS OF GOD IN THE GIFFORD
LECTURES DURING THE PERIOD 1927-1929.

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DISSERTATION

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BY

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"KEY"

1. NPW--Nature of The Physical World.
2. DPS--Domain of Physical Science.
4. PR---Process and Reality.
5. QC---Quest for Certainty.
6. MLP--Mechanism, Life and Personality.
INTRODUCTION

The present study is an effort to determine the trend of contemporary theological thought as it is reflected in four typical series of Gifford Lectures, delivered during the years 1927-1929, with special emphasis on the conceptions of God as such. A secondary purpose is to determine to what degree each Lecturer carries out the purpose of the Lectureship, the method by which such purpose was executed, and the relation which such system may bear to other systems in the history of thought.

The first chapter treats Eddington's views of the world, and the general method of procedure employed in its construction will be applied in constructing the chapters that follow.
The Gifford Lectures constitute a Lectureship on Natural Theology which was founded in 1887 in accordance with the Trust Disposition and Settlement of the late Adam Gifford, sometime Senator of the college of Justice, Scotland. Lord Gifford directed his Trustees to pay over to the Academicus of the University of Aberdeen the sum of Twenty Thousand Pounds, to pay over to the University of Glasgow an equal sum, and to pay over to the University of St. Andrews the sum of Fifteen Thousand Pounds. In each case the purpose of this bequestment was to establish a Lectureship or popular Chair for promoting, advancing and diffusing the Study of Natural Theology, in the widest sense of that term, - in other words "the knowledge of God, the Infinite, the All, the First and only Cause, the One and Sole Existence, the Sole Being, the Sole Reality and the Sole Substance, the Knowledge of His nature and Attributes, the Knowledge of the Relations which men and the whole universe bear to Him, the Knowledge and Nature and Foundation of Ethics or Morals, and of all the Obligations and Duties arising."¹

¹ Testamentary Deed of Lord Gifford.
The Senate are the patrons and the Lectures are designated by the appointment of Lecturers from time to time by the Senatus Academicus. The Lecturer is appointed for a period of two years and no longer, but the same Lecturer may be reappointed for two other periods of two years each, provided that no one person shall hold the office of Lecturer for more than six years, or three two year terms, in all.

The Lecturer is subject to no test of any kind. He may be of any religious denomination whatever, or of no denomination at all. He is not required to take an oath, or to emit or subscribe to any declaration of belief, or make any promise of any kind. The Founder expressed a wish that the Subject should be treated as strictly natural science, like Astronomy, Physics and Chemistry. The Lectures are public and popular, open not only to students of the Universities, but to the whole community without matriculation. Besides a general popular audience, the Lecturer may form a special class of students for the study of the subject, which will be conducted in the usual way, and tested by examination and thesis, written and oral. The Lectureship extends over the Universities of Aberdeen, Edinburgh, Glasgow and St. Andrews.
Since its institution this Lectureship has employed many men of distinction in the history of thought. And with but few exceptions all have adhered to the wishes stipulated in the Testamentary Deed of Lord Gifford. Among them are such personalities as Max Muller, E.B. Taylor, William Wallace, James Ward, Josiah Royce, Emile Boutroux, Hans Driesch, Bernard Bosanquet, Seth Pringle-Pattison, Henri Bergson, W.R. Sorley, Samuel Alexander, Dean Inge, Lloyd Morgan, J.S. Haldane, A.S. Eddington, John Dewey, and A.N. Whitehead. This group of men represents diverse fields of specialization, and each particular lecturer from among them aims at a general conception of God, beginning with the data available in his particular field of investigation.

The choice of the four systems expressed in the lectures to be examined has been made in the light of the sphere of their respective influences in reconciling philosophy with all the sciences - natural and social. Eddington has done much by way of astrophysics to support the doctrine of a spiritual reality. Perhaps it is not beside the point to say that his scientific investigations have made of more use the doctrine of cosmic relativity, and has
demonstrated its plausibility, than any other work of science. Haldane approaches the matter as a well trained physician. He finds evidence against the sufficiency of all biological sciences, follows out implications of life and arrives at a spiritual reality. Whitehead's system is significant in that it is the most complete expression of the New Cosmology. Dewey's system is significant because of its great social influence. To sum up, then, the major factor which determined the choice of these four systems is the tendency of each to synthesize philosophy and science, to give to philosophizing a scientific basis akin to that of natural science, and subsequently, to modify human experience and conduct.

Relative to the chronology of these lectures it played little part in their being chosen. Only indirectly it might reflect the recent trend in philosophy in a temporal way. This trend is towards a doctrine of

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3. It might be said that astronomical and physical concepts dominate Eddington's system, biological concepts dominate that of Haldane, mathematical conceptions dominate that of Whitehead and biologico-social conceptions dominate that of Dewey. The comparative lengthiness of chapters dealing with Whitehead and Dewey is in keeping with the sphere of influence of their respective systems of thought.
immanence as opposed to transcendence, whose expression displays a growing synthesis of the traditionally two-fields of thought, - Philosophy and Science.
CHAPTER I
GOD AS THE COSMIC MIND.

1. Biography and Introductory.

Arthur Stanley Eddington, eminent British Astronomer and physical scientist, was born at Kendal, England, December 28, 1882. Received his education at Owen’s College, Manchester and Trinity College, Cambridge, being Senior Wrangler, 1904, and Smith’s Prize-man, 1907. During this latter year he was elected fellow of his college. He was chief assistant at the Royal Observatory at Greenwich, 1906–1913; then became Pluiman Professor of Astronomy at Cambridge. He became director of the Observatory at Cambridge, 1914, and was elected fellow of the Royal Society in the same year. Among other awards and honors which he has realized are the Hopkins Prize of the Cambridge Philosophical Society, 1918–1921, the Poutecoulant prize of the French Academy, 1912, the gold medal of the Royal Astronomical Society of the Pacific, 1924, and the Henry Draper medal of the national Academy of Sciences, 1924.

His principal researches have been on the motion of stars, stellar evolution and relativity. A survey of his writings and lectures yields evidence on this point. His work, The Observatory, a monthly review of astronomy, appeared, 1913; his Stellar Movement and Structure of The Universe, appear-
ed, 1914; his Sir David Gill, the annual report to the Smithsonian Institute, 1915; his report on relativity physics and gravitation, in joint authorship with Sir Frank Watson Dyson, to the Smithsonian Institute, 1919; his Report on The Relativity Theory of Gravitation, 1920; his Relation of the Galaxy appeared, 1920 as his Halley Lectures, his Space, Time Gravitation, an outline of the general relativity theory, appeared, 1921; his Theory of Relativity and its Influence on Scientific thought appeared, 1922, as his Romanes Lectures; his Mathematical Theory of Relativity on space time and gravitation appeared 1923; his Borderland of Astronomy and Geology, an annual Smithsonian report, appeared, 1925; his Domain of Physical Science, an Essay in Science, religion and reality, appeared, 1925; his Internal Constitution of The Stars appeared, 1926; his Stars and Atoms, based on his lecture before the British Association appeared, 1927; and his Nature of The Physical World,—which deals with physics, philosophy, science, and philosophy and relativity physics, and which represents the major work under examination,—appeared, 1928 as his Gifford Lectures, delivered at the University of Edinburgh, January to March, 1927.
From a survey of his works it is evident that Eddington's entire system of thought centers around the Doctrine of Relativity. Such view is elucidated in and corroborated by his Gifford Lectures. Here one finds such doctrine paramount. It is extended into every fact of experience, whether "subjective" or "objective". Such being the case he begins his system of philosophy with a refutation of the absolute existents of classical or Newtonian Physics. For him, Experimental evidence - afforded us by the Natural Science has proved such absolute existents (viz. space and time) to be invalid. The increasing refinement of methods and the abundance of data which are available through the physical sciences have given us a new system of physical reality. The effect of such is, that we no longer speak of things as they are, but in terms of "pointer-readings". We think we are nearer to an understanding of the ultimately real when we replace the categories of substances, things and influences of classical physics by the scientific world of electronic charges. As a matter of fact classical physics was realistic and modern physics is symbolic. For modern physical science is only an abstract system of "pointer-readings", and all scientific theories are constructed out of inference.
Neither of the three kinds of physical laws, the identical, (mathematically-physical truisms) the statistical or mathematically-physical expression of uniformity, the transcendentental (mathematically-physical individuality), tell us anything about reality. And the nearest approach to knowledge of such is to be found in mystical experience. For knowledge of the former type is symbolic while that of the latter is intimate. It follows that reality implies mind. And for Eddington mind is the "stuff" of Reality. The mind of the individual fades into unconsciousness and thence into something indefinite but yet continuous with his mental state. Feelings, purposes, and values in the individual promote image building in the human mind, and this process of image-building connects him with a spiritual world. This world is a universal mind or Logos which forms the background outside the cyclic scheme of physical science and upon which the latter depends. It is in this wise that Eddington accepts the validity of the 'matter-of-factness' of the new science on the one hand and at the same time appeals to the subjective factor and the so called secondary qualities of classical physics in an esthetic and a mystical interpretation of reality,
on the other. Faced with the inevitable dualism which such position presents, his only recourse is an intellectual Spiritualism as a ground of cosmic unity.


Eddington's initial thesis postulates two worlds,¹ the substantial and common sense world of every day experience, and the symbolic world of recent science. Given a writing table, he argues, the one table has a dual existence. "There are duplicates of every object about me."² For the experiential table is one of substantialness, a particular "thing" in reality, whereas the scientific table is one in flux, a locus of influences, electrons, protons, quanta, Hamiltonian functions, et cetera.³ In this manner he characterizes the world of experience and the world of physical science, respectively. But he immediately adds that these two worlds are merely different interpretations, or different aspects of a Universe.⁴ It is here that the first implication of a common ground of both the physical and mental aspects of experience is to be found.

Eddington contends that the trend of modern and contemporary physical science has been a search for the common background of all experience, and thus the unity of all its categories. On the other hand its very efforts in this direction have resulted in an 'explaining away' of the world of experience with its permanences and substances. It is an effort to substantiate this contention that leads Eddington into an historical survey of modern and contemporary Physical Science.

In classical physics the two realms were regarded as distinct, but with a much closer linkage, he thinks. The physicist at this time borrowed the material of his world from the world of experience. But he can no longer do this as a scientist. For the theory of relativity has itself destroyed the fundamental postulates of classical physics. These fundamental postulates once broken down, the whole notion of primary and secondary qualities becomes useless. So he assumes that Relativity theory has presented evidence in favor of a Universe opposed to discrete atomicity; that in the real significance of nature's plan frames of space must be swept a

5. I understand him to be referring to the traditional primary and secondary qualities of classical physics.
6. I understand such fundamental postulates as absolute space, time and mass.
way, and in consequence the concept of so-called "right location" at the basis of substantiality and 'thing' is not so important as Classical Physics proposes it to be. This is made clear, he thinks, in the trend of modern and contemporary science, which is towards breaking down the separate categories of 'things' 'influences' and 'forms', and substituting a common background (rather discovering one). For all experience has progressed chronologically and systematically, and along definite lines.

To verify his view of the trend of modern and contemporary science Eddington's appeal is to the history of science. The first basic step in this direction was the development of relativity, and the earliest and best known experiments definitely indicating relativity were those performed by Michelson and Morley, 1887, the results of which the so-called Fitzgerald contraction has become synonymous. Lorentz and Larmor verified the results of the Michelson-Morley experiment mathematically, 1900, expressing the quantitative effect of the Fitzgerald contraction. Morley and Miller repeated the

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7. N.P.W., p 27.
8. Ibid. p 5ff.
9. Ibid. p 7ff.
10. Ibid. p 5
same experiment, 1905, under conditions more refined, with results in agreement with previous investigations. In 1915 Einstein\textsuperscript{11} developed the theory of relativity so as to include non-uniform motion.\textsuperscript{12} With this the classical physical concept of gravitation as so much "tug" or native force in each discrete unit mass of matter was broken down. For such concept is founded upon the notions of absolute space, time, mass and motion.\textsuperscript{13} Another significant phase in the trend of modern and contemporary science Eddington finds expressed in the analysis of the atom. For Classical Physics all atoms were minute indivisible "billiard-ball" weight. He argues that the fundamental change in the familiar physical quantities ushered forward by the works of Einstein and Minkowski,\textsuperscript{14} 1905-1908, budded forth out of the fundamental change in the familiar ideas of space and time. Laboring under such influences, Rutherford\textsuperscript{15} introduces the greatest change in the conception of

\begin{itemize}
\item[11.] Ibid. p. 111ff.
\item[12.] I understand Eddington to be referring to the "general" as opposed to the "special" theory of relativity. Cf. F.S.C. Northrop's Science and First Principles, pp. 67-95.
\item[13.] Northrop gives a good exposition of this view. Cf. pp. 82-95.
\item[14.] M.P.W. p. 53.
\item[15.] Ibid. p. 2.
\end{itemize}
the structure of the atom since Democritus when he analyzed it into positive and negative electricity, 1911, thus changing the billiard-ball conception into that of a miniature solar system. Two years later Niels Bohr developed Rutherford’s theory more fully and even the atom itself was transformed from something substantial to a swarm of electrical units moving with tremendously high velocities along the paths of their respective orbits.

A third significant phase in the trend of modern and contemporary science Eddington finds expressed in the Quantum theory.\textsuperscript{16} Here he finds a factor transcending the electron and proton, namely, the incommensurable atom of action "\( h \)" discovered by Heisenberg,\textsuperscript{17} 1925, generally known as the ground of the Principle of Indeterminacy.\textsuperscript{18} During the same year Schrodinger gave formal expression to his wave mechanics.\textsuperscript{19}

Eddington argues that the effect of such new data discovered by modern and contemporary science is quite significant. Relativity has destroyed the foundation of

\begin{itemize}
\item \textsuperscript{16} Ibid. p. 179ff.
\item \textsuperscript{17} Ibid. pp. 199, 225.
\item \textsuperscript{18} Ibid. p. 220ff.
\item \textsuperscript{19} Ibid. PP. 206, 211ff.
\end{itemize}
the concepts of absolute space\textsuperscript{20} and time,\textsuperscript{21} of absolute force and distance,\textsuperscript{22} and of right location.\textsuperscript{23} Experiment has demonstrated that the atom is no longer a hard billiard-ball substance, but is highly porous, representing a multiplicity of spatial relations, - a miniature solar system.\textsuperscript{24} The Quantum\textsuperscript{25} has introduced Indeterminacy. On the basis of this evidence Addington asserts the downfall of classical Physics, with which must go any form of materialistic determinism. But such argument in favor of free will cannot be taken too seriously. For it is based upon a deduction from the Principle of Indeterminacy. And since such principle is based upon the behavior of energy units on the most minute scale the validity of its application to large scale phenomena is not only hypothetical and arbitrary, but questionable. Prediction\textsuperscript{26} is the cardinal factor in physical science. It is expressed in mechanical laws. But mechanical laws are themselves expressions of

\begin{flushleft}
\textsuperscript{20} Ibid. pp. 19, 35.
\textsuperscript{21} Ibid. p. 61.
\textsuperscript{22} Ibid. p. 35
\textsuperscript{23} Ibid. pp. 20-21.
\textsuperscript{24} Supra, Rutherford.
\textsuperscript{25} Supra, Heisenberg.
\textsuperscript{26} W.P.W. pp. 228, 244.
\end{flushleft}
statistical probability, unless they be mere truisms. Carrying out the line of his argument in this wise Eddington concludes that the mechanical laws of physical science cannot give a complete account of the universe in all its aspects. Moreover, he asserts that the argument introduced by the Principle of Indeterminacy is Epistemological and in itself points to the fact that the world of physics is one contemplated from within. The whole scientific inquiry starts with the familiar world and must return to it in the end. It is in this manner that Eddington reduces the field of science to a subjective product, and seems to conclude in favor of the reality of mind only.

This argument becomes more obvious in his essay on the field and scope of physical science. Here Eddington avers that science forms a closed system; a vicious circle which can at best only describe the interconnection of entities, but can say nothing of the essence of entities. Here again we are led to feel that he is implicitly asserting something akin to mind.

27. Ibid. p. 225, 304.
28. Ibid. Introduction, xiii.
30. Ibid. p. 288.
or Spirit as the basis of the obviously physical when he speaks of intrinsic essences. The world constructed by science is a world of shadows which reflects a world familiar to our consciousness, and the only motive for the conception of such an external world as that described by science lies in the existence of other conscious beings. Each individual constructs his own world of science from within, and relative to the spatio-temporal frame of reference, and a common element of consciousness forms the external world or the neutral ground of scientific communication and unity; a symposium of presentations to individuals where a synthesis of all appearances from all points of view is affected. In other words science begins, says he, when two individuals first compared the notes of their experiences.

After such historical defense of the matter-of-factness of the trend of modern and contemporary science on the one hand, and such critical defense of the primacy of the subjective factor on the other,

32. D.P.S. p 122.
34. D.S.P. pp 192, 196.
35. Ibid. pp 196.
36. W.P.W. chapters I-X.
37. Ibid. pp 92, 93, 94, 100, ch. XI-XV. Also Supra.
Eddington copiously admits that, although the goal of modern science has been the unification of all experience (to find a common ground for the table of science and the table of experience), it has developed in the opposite direction. Science has failed to unify the world of everyday experience and the world of physical science. Instead of so doing it has continued in a vicious circle, running around like a "kitten chasing its tail," and getting nowhere. The result is an abstract symbolic world typified by science; abstract because it is only a partial expression of men's environment, symbolic because it expresses only a system of metrical relations. In this wise Eddington is not satisfied merely to assert the truism that science can not be all comprehensive, but even ever that the goal and method of science is abstraction, as is so well illustrated by the 'charming reduction of "An elephant slides down a grassy hillside" to a set of colorless pointer-readings' of metrical relations.

40. Ibid. p 319.
41. Ibid. p 275.
42. Ibid. pp 251 f. Also, Cf Everett W.Ridl's Relevance and Scientific Method, p 1.
The next step which Eddington takes is in the direction of a search for the unitary and ultimate ground of all experience. The very nature of science is of such character as to cause the real thing with which it proposes to deal to elude us. For at best only one aspect of experience is accounted for, namely, sense-impressions. And since there must always be something upon which and in which the impressions are existent, Eddington is again in favor of a mental substratum as the unitary and ultimate ground of all experience. For feelings, desires, purposes and values are aspects of experiences whose existence is equally as real as is the existence of sense impressions, although they fall into the category of the non-metrical and find no place in physical science. Proceeding upon the assumption that values and aesthetic experiences can not be explained by physical science on the one hand, and asserting physical science to be product of mind on the other, Eddington for the first time openly avers that he has been tacitly assuming, namely, that the unitary and ultimate ground of all experience is mental, and

44. Ibid. 324.
45. Ibid. p 263. Mr 'X' is always unknown to the vicious circle of science. Cf. Also Supra.
the activity of physical science is limited to mind while its actuality is derived from contact with this greater and unmetrical background of Spirit. 46 Since mind is the ultimately real the only approach to the ultimate nature of things is through the direct knowledge of mind. 47 In fact "The stuff of the world is mind-stuff". 48 And this mind stuff is not spread out in space, rather space and time are parts of a cyclic scheme derived out of it. It differentiates into parts, rising to the level of consciousness only here and there, and it is from these islands of consciousness that all knowledge proceeds. 49 In every self-knowing unit is contained direct knowledge of the ultimately real. "Besides the direct knowledge contained in each self knowing unit, there is inferential knowledge." The latter form of knowledge is scientific while the former seems intuitional. So it is tacitly assumed that the only approach to the underlying reality is through intuition. This is the obvious conclusion from what

46. D.P.S. p 211.
47. N.P.W. p 230.
48. Ibid. p 276.
49. Ibid. p 277.
immediately follows. Each island of consciousness is connected with the ultimate reality through nerve fibers, and its acquaintance with the so-called external world is possible through these fibers which run into it. We know our end of the fibers as our world, but we reconstruct the rest of our knowledge by sorting, decoding, intensive image building, comparison and reason. 51 This being the case it is in moments of intuition that one approaches nearest to reality. For all knowledge other than that of self-consciousness is relative to something which can only be presented to mind symbolically.

Eddington goes a step further to make clear his contention that the ultimate reality is mental in character in his attitude towards Russell's Neutral Monism. 52 Neutral Monism "implies that we have two avenues of approach to an understanding of the nature of mind. We have only one approach, namely, through direct knowledge of mind." ... I assume that we have left the illusion of substance ... I certainly do not intend to materialise or substantialise mind." ... "It

51. Ibid. pp 277ff.
52. Ibid. p 270-281.
is difficult for the matter-of-fact physicist to accept the view that the substratum of everything is of mental character". Individual consciousness is not sharply defined but fades into sub-consciousness. And even beyond this one must postulate something indefinite, but continuous with our mental state, namely, the world-stuff or cosmic mind. 53

Eddington's basic argument for such form of spiritualism is the fact that no one can deny mind as the first and most direct thing in experience on the one hand, and that all scientific knowledge is inference on the other. And since the 'substance' concept has been broken down by science itself we must no longer cherish the illusion that there is a world which is self-sustained and demands no hypothesis whatever, not even the hypothesis of God. 54 It is here that Eddington for the first time gives a hint as to his conception of God. I quote: "If scientists were to repent and admit that it was necessary to include among the agents controlling the stars and the electrons an omnipresent spirit to whom we trace the sacred things of conscious-

ness, would there not be even prayer apprehension?" Science, he ever claims an independence of such hypothesis as necessary, and one might suspect physics would reduce God to a system of differential equations. But one must not forget that the sphere of differential equations is only a metrical-cyclic scheme extracted out of a more ultimate reality. And however much the ramifications of the cycles may be extended by further scientific discovery they cannot, from their very nature, trench on the background in which they have their being and actuality. It is in this background that finite consciousness lies, and only here, if anywhere, "We may find a Power greater than, but akin to Consciousness. ... So that the crudest anthropomorphic image of a spiritual deity can scarcely be so wide of the truth as one conceived in terms of metrical equations. ... From this perspective we recognize a spiritual world along with the physical world. Experience, - that is to say, the self environment --, comprises more than can be embraced in the physical world, restricted as

56. Ibid. p 232.
it is to a complex of metrical symbols." For there must be such a world if the reality of consciousness of desires, purposes, values and responsibilities, so obviously existent, is to be reasonably justified.

In consequence "those who in the search for truth start from consciousness as a seat of knowledge with interests and responsibilities not confined to the material plane, are just as much facing the hard facts of experience as those who start from consciousness as a device for reading the indications of spectrosopes and micrometers." In either case consciousness is the significant factor.

The question which is suggested by such argument is one as to what type of conscious experience is most pregnant with insight into reality. Eddington answers this question by stating that man's nearest and most complete approach to reality is to be found in mystical experience. Experience of this type reveals that the harmony and beauty on the face of nature is at root one with the "gladness that transfigures the face of man." Our minds are not

60. Ibid. p 288
63. Ibid. p 321.
separate existences apart from the universe, and "the feelings we have of gladness and melancholy and our yet deeper feelings are not of ourselves alone, but glimpses of a reality transcending the narrow limits of our particular consciousness." The knowledge imparted through science and reason is symbolic, while that imparted through mystical experience is intimate and supra-metrical, thus eluding analysis and codification. The one comes introspectively, the other, spontaneously. The mystical feeling of nature and the mystical experience of God, which become identical in his system, must be spontaneous to be really genuine. Theology itself is symbolic knowledge and the intimate response of the spirit, or the mystical experience, is the cardinal factor in the religious experience. The only thing which could live comfortably in a world of science is a symbol itself, not to mention the complexity of personality with its supra-metrical aspects. It is these aspects that interweave it with the spiritual world whose environment is

66. Ibid. p 322.
67. A very colorful contrast of these two types of experience is found on pp. 316-317, NFWM. in the scientific and poetic treatments of the 'Generation of Waves by Wind'
69. Ibid. p 323.
not a world to be analyzed, but to be lived in.\textsuperscript{70}

Eddington's view of the primacy of consciousness presented here is identical in essence with his defense of such position in an earlier treatment of the problem.\textsuperscript{71} Here he takes the position that the ultimate reality is mind as a logical necessity. Argument on this point takes two forms, namely, the Principle of Differentiation and the Principle of Creativity. The Principle of Differentiation takes two forms, namely, differentiation by form and personal description and differentiation by matter or spatio-temporal relations. Consider a world without consciousness, he avers, and there is no meaning whatsoever in discriminating between A (actually studied experimentally) and B (that which might have been). It is the mind that referees the game and decides in favor of A against B. Or we may consider Professor Weyl's reference to the four dimensional world of the relativity theory where the past and the future lie mapped out along with the near and the distant, and where 'each event is there in its proper relation to surrounding events, but events seemingly never

\textsuperscript{70} Ibid. p 324.
\textsuperscript{71} Domain of Physical Science. pp 211-212.
undergoing the formality of taking place." "It is a four dimensional continuum which is neither time nor space. Only the consciousness that passes on in one portion of this world experiences the detached piece which comes to meet it and passes behind it as a process that goes forward in time and takes place in space." \(^{72}\) It is by reference to consciousness that both matter and form have meaning and history, and a world without it is without meaning. "The world is simply spread passively in its four dimensions with the events connected by relations to which we can give numerical measure, but it is by their values for consciousness that we differentiate certain of these relations as 'being' and others as 'becoming', certain relations as passive, others as dynamic. That dynamic quality by which nature is not merely something which exists, but something which becomes, is not in the physical scheme, and must be introduced like actuality by filling the skeleton scheme of physics with things which over and above their physical definition have a value for consciousness, that is, a spiritual value." \(^{73}\) And now comes the Principle of Creativity, which is an

\(^{72}\) Op. Cit.
\(^{73}\) Op. Cit.
argument of values. "It is generally agreed" he argues, "that esthetic and ethical values ... belong to the mental sphere; but it appears also that even the values attached to physical entities such as mass and force, is ... ultimately a value for consciousness."74 Above all is consciousness a prerequisite for theoretical physics whose proper choice of combinations of potentials in order to arrive at valid generalizations must be a product of mind. It is in this wise that Eddington offers three arguments for the necessity of consciousness and the primacy of mind, namely, 1) rational discrimination, 2) cosmic orderliness, and 3) the existence of values.

Eddington avers that even science itself tends towards demonstrating the necessity of consciousness and the primacy of mind. I quote to illustrate this point; "Our thesis has been that the recent tendencies of scientific thought lead to the belief that mind is a greater instrument than was formerly recognized in prescribing the nature and laws of the external world as studied in physical science; that in explaining his own territory the physicist comes up against the influence of the wider reality which he cannot altogether

shut out; and that by its selection of values the mind may indeed be said to have created its physical environment." Extending the significance of mind still further, he continues; "We have spelt mind with a small 'm', for our values are human values; yet we trust there is even in us something that has value for the eternal. Perhaps the actuality of the world is not only in these little sparks from the divine which flicker for a few years and are gone, but Mind, the Logos. 'The same was in the beginning with God ... and without him was not anything made that was made'."75

In such manner Eddington avers the existence and character of God. And although unable to prove such, he is willing to accept it on the basis of its plausibility. For even science, mathematics and logic can offer as proof for their assertions, as the most meritorious achievement, only plausibility in any attempt at proof.76 So we are all alike, stumblingly pursuing an ideal beyond our reach in both the scientific and the spiritual realms. But if the former realm has validity, the latter most certainly has. For it is in the latter that the whole of experience is found in a

75. Ibid. p 217.
76. NPW. p 337ff.
unity and as belonging to a unique experiential center. We build the spiritual world with symbols from our own personality; we build the scientific world from point-of-readings. The argument develops into an argument for religion. It is in the spiritual realm of personality that the religious experience - a dimly felt environment in moments of exaltation, which feeling is lost to us in our daily routine - is to be found. And "to turn it into more continuous channels we must be able to approach the World Spirit in the midst of our cares and duties in that simpler relation of spirit to spirit in which all true religion finds expression."77 Continuing his description of the object of religion, I quote further; "The idea of a universal Mind or Logos would be, I think, a fairly plausible inference from the present state of scientific theory; at least it is in harmony with it. But if so, all that our inquiry justifies us in asserting is a purely colorless pantheism."78 Such hypothesis, although perhaps questionable, cannot be dismissed79 by science as "muddle-headed romancing."

The nature of consciousness itself is its basic evi-

77. Ibid. p 338.
dence. And, if consciousness cannot be trusted, then what can be trusted? The physicist trusts to his sense organs for his data. But are not the senses quite capable of leading one into gross illusions equally as well? Dismissing the argument of science against such a view of reality, Eddington proceeds to emphasize once more the grave significance of the esthetic and mystical aspect of experience. The point that "must be insisted on is that religion as our contact with spiritual power if it has any general importance at all must be a common place matter of ordinary life, and it should be treated as such in discussions." For example, scientists treat color as merely a question of wave lengths. But wave lengths cannot be substituted for the feeling that "eyes which reflect light near wave lengths of 9800 are a subject for rhapsody whilst those which reflect wave lengths 5300 remain unsung. ... The materialist who is convinced that all phenomena arise from electrons and quanta and the like controlled by mathematical formulae, must presumably hold the belief that his wife is a rather elaborate differential equation; but he is probably tactful enough not to

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obtrude his opinion in domestic life. If this kind of scientific dissection is found to be inadequate and irrelevant in ordinary personal relationship, it is surely out of place in the most personal relationships of all, namely, that of the human soul to a divine spirit." We cannot by starting with ether, electrons, and quanta, arrive at conscious men and account for what is apprehended in his consciousness. And even the deepest philosophical researches as to the nature of the Deity "may give a conception equally out of proportion for daily life; so that we should rather employ a conception that was unfolded nearly two thousand years ago." 82

It is in this manner that Eddington's philosophical position has been developed. The consequence is, that although he began with an intense interest in modern physical science and a critical examination of it, he ends with a spiritualistic idealism in which the so-called 'material' is only a relational product generated of and constructed by mind. 83

81. Ibid. p 341.
83. Cf. Ibid. pp 341-349.
3. Eddington's Conception of God.

In the light of the survey of Eddington's philosophical system just given, the main problem of this investigation may now be specifically approached, namely, his conception of God. The problem is immanent in every Gifford Lecture in virtue of the purpose of the Institution, namely, a Lectureship whose objective is the advancement of Natural Theology. The problem having been given a-priori, the salient factor with the lecturer is his method of approach.

On this point it is evident that Eddington begins with the dualism of practical experience. But the evidence of modern science discredits such dualism by destroying the classical concept of Substance. The question which is now raised is one to whether science has in this manner unified the dualistic world of experience, namely, the world of science and the world of work-a-day life. He is willing to examine modern science in quest of the answer. His point of departure is an examination of the theory of relativity. In fact this theory becomes the cardinal factor in the development of his standpoint. But relations imply something
which is related. There must be at least two "things" in order that a relation might exist. Stated differently, relations are ontologically real only as between "some things" which are related. This argument in itself presupposes substantiality. Assuming that modern science has destroyed the validity of the concept of substance, Eddington deems it more timely to emphasize the structural character of reality only. This structural aspect is expressed in his notion of relativity. And as Northrop points out, "Reality is not merely a system of relations with electrons as mere symbols, but there are souls which select out possibilities which the most generalized mathematics permits, the particular restricted part which is the metric of our actual world." This point is further urged by denying the existence of physical substance, a denial which makes mind or consciousness the ultimate object of relations. This is made clear in his chapter on 'World Building' where he points out that both worlds are products of mind and its way of selecting its building material. It follows that after all reality is at bottom mental in character and both the world of science

2. NPW. Ch. XI Esp. pp 239-240, 241, 244, 245.
and the world of lay experience are only different expressions of the same thing, namely, minds and products of minds in a relational space-time continuum. The familiar world becomes subjective, while the world of science is an expression of the objective relations of other mind-stuff; for the whole of reality is a mental stuff. It follows, as a matter of course that the only approach to a study of nature 'so-called' is through the direct knowledge of mind. To illustrate his position on this point, I quote; "I venture to say that the division of the external world into a material world and a spiritual world is superficial." 4 ... Again, ... no complete view can be obtained so long as we separate our consciousness from the world of which it is a part." 5 It is in this wise that he finds the solution to the problem of God, which solution he feels is justified in the light of modern science, namely, in a unification of man, of nature and of the World-mind, which unity manifests itself in plurality through the differentiation of the mind-stuff constituting reality.

4. Ibid. p 200.
5. Ibid. p 330.
Now as to the existence and nature of God. Eddington not only implicitly, but also explicitly avers the existence of God. God is the World-Spirit or Supra-Mind. He is the Absolute Valuer as the world-ground in whom we live and move and have our being. He is the Ultimate and Self sufficient Ground, and forms the world-ground for all aspects of human experience. He is the Benefactor of us all; "the beneficent Father." God is identified with the Ultimate Mental Reality, and is thus omnipresent. He is the cosmic mind, the World-Spirit, the Supreme Power which is both immanent and creative. Finite selves are hooked up with God through the nervous system, and they exist only in and because of the World-Spirit as their ground in whom they live and move and have their being. Finite selves are analogous to this cosmic Spirit, or, Man is made in the image of God. This Universal Mind is identified with Logos Doctrine in the Gospel of St. John. It is in this manner that Eddington concludes with a 'colorless Pantheism'.

As to a proof for the existence of God Eddington willingly admits he has none, but avers that the vali-

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8. Ibid. p 338.
dity of such hypothesis is its plausibility as vouched for in the nature of experience itself. The nature of experience is triadic, namely, rational discrimination, cosmic orderliness and the existence of values. The axiological viewpoint turns out to be the basic anti-materialistic argument. Further, recent physical science has reduced the ground of so-called permanence to an illusion by destroying absolute quantities. In so doing it reduced necessary causation to statistical probability on the one hand and established 'free-will' on the other. And even the quantum theory introduces super-naturalism in virtue of indeterminacy. All these arguments are anti-materialistic and suggest the hypothesis that Mind is the Ultimate Ground of Being. And all things exist only in relation to consciousness. God becomes the 'Unmoved Mover.'

Our most complete knowledge of God is to be found in moments of intuition and mystical experience. Being directly connected with and in God through self-consciousness, when we look into the innermost part of our own consciousness in meditation, we behold God. This is in moments of immediate experience, and is to be

sought in esthetic experiences as opposed to the mediate knowledge of science. The course of his argument eventuates in a 'Defense of Mysticism and Mystical Religion' in the final chapter of his Lecture, as is true of any form of religion whose metaphysical standpoint is Pantheistic or Spiritualistic.\(^{10}\)

4. General Conclusion.

A. The degree to which Eddington executed the purpose of the Gifford Lectureship.

It is of interest to note in just what measure Eddington carries out the purpose of the Lectureship according to its Deed\(^1\) in the development of his philosophical position. The Deed specifically defines the purpose of the Lectureship, namely, an advancement of the study of Natural Theology. By this is meant a systematic treatment\(^2\) of the problems of the existence of God, His Nature and His relations, in so far as it proceeds from natural and unrevealed data. Its idea is


\(^1\) Testamentary Deed, 1.c p.1, Historical.

\(^2\) Cf. Dictionary of Philosophy and Psychology, Article on Natural Theology.
positive and proceeds on the assumed possibility of deriving knowledge of God out of the natural resources of human reason. The Benefactor not only designated this Lectureship as one in behalf of Natural Theology, but expressed the desire that the subject of each lecture "should be treated as a strictly natural science, like Astronomy or Chemistry." Measured by this as a norm Eddington's methodology is quite in harmony with the methodology designated by the Benefactor. The survey of the development of his philosophical position fully justifies this conclusion. For, beginning with the data of his particular field of research, namely studies in relativity physics, he extends the notion of relativity so as to include all forms of existence. He is thus led to emphasize structure or relations as the basic factor in reality. He is then led to accept as necessary the postulation of a selecting and building agent which is responsible for and productive of all structural relations, - namely consciousness or mind. The destruction of classical physical substance on the one hand and the intrinsic nature of experience on the other lead to the necessary postulation of a

3. Testamentary Deed, i.c.
4. NFW. pp 277, 338.
Spiritual Reality, a World-Soul, a cosmic mind, the Infinite, the Sole Reality, in whom we live and move and have our being, — God. Aside from the ground of inference as to the existence of God offered by the postulates of science and the nature of experience itself our most intimate and only genuine knowledge of God is found in mystical experiences; "we all know that there are regions of the human spirit untrammeled by the world of physics. In the mystic sense of the creation around us, in the expression of art, in a yearning towards God, the soul grows upward and finds the fulfillment of something planted in its nature. The sanction for this development is within us, a striving born with our consciousness of an Inner Light proceeding from a greater power than ours."\(^5\)

God is an Omnipresent Spirit and a Beneficent Father, and He manifests Himself as the Inner Light of the human soul. The relation which man and nature bear to God is as that of part to whole, or as different manifestations of the One.\(^6\) It is here that Eddington becomes entangled in the traditional problem with which any such pantheistic position must contend, namely,

\(^5\) Ibid. p 327.
How can the apparent uniqueness of Individuality be accounted for? Eddington is never able to give a convincing answer. The Metaphysical basis of morals is found to be in the world spirit or God, who is both Creator and Sustainer of all values. On the other hand Eddington is inclined towards agnosticism as to the basis of morals. This is clearly indicated in his attitude towards the problem of Evil, where he argues that such problem is beyond any treatment which would fall in his domain, since science cannot tell whether this World-Spirit is good or evil, "and its halting argument for the existence of God might equally well be turned into an argument for the existence of a Devil."7 Neither is it to be expected that science should show how such a 'colorless pantheism' is to be made into a living religion. This must be a work of the innermost channels of consciousness. And fortunately, even science itself justifies the hypothesis of an immanent value - creative and value-conserving World-Spirit. As to Ethical orientation Eddington avers the Principle of Indeterminancy as a basis for free-will. But it is very much a purely verbal matter to transfer

7. Ibid. p 338.
those concepts which deal with inanimate quanta to the human sphere with no change in meaning-content. For organic human personality is much more complex in its structure, and his argument for the existence of free-will is beside the point. Apparently sensing this difficulty involved in Ethical considerations, he concludes in this wise: "So that we should rather employ a conception that was unfolded nearly two thousand years ago." This seems to be a reference to the teachings of Jesus about ethical relations.

It is in this manner that Eddington carries out the purpose of the Gifford Lectureship in a large measure, particularly in his methodology and technique. For he begins by employing concepts which are strictly within the bounds of his field of specialization, and following out certain inferences immanent in those concepts familiar to his particular science, he arrives at the conception of God.

B. Historical significance of Eddington’s Position.

The philosophical position which Eddington assumes is perhaps the most frequently repeated philosophical position

8. Ibid. p 341.
of metaphysical significance. It was the metaphysical standpoint of Heraclitus.\(^1\) At times the apparent distinction which it makes between the physical and the 'real' world of experience, along with the notion of the immediate apprehension of reality in esthetic experience, is suggestive of characteristic tendencies towards Kantian Idealism.\(^2\) But nearest of all does this position approach that of the English Objective Idealists.\(^3\) They are in agreement as to the real significance of the world of science as a symposium of and for minds;\(^4\) they agree in the concept of substance as a product of mind as well as to the primacy of mind;\(^5\) they agree in emphasizing the conception of the world as a world of experience;\(^6\) in his notion of the differentiation of the mind-stuff into islands of finite consciousness, along with his doctrine of immanence, Eddington becomes involved in the internality of all relations, and concludes that finite consciousness is merely a differentiation of the Absolute, akin to Absolute Idealists;\(^7\)

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1. Greek Philosophy, Fuller, pp 218-220.
2. Cf. The Critique, Transcendental Esthetic and Logic, Kant.
3. Especially Green, Bradley and Bosanquet.
5. Ibid. p 241.
6. Ibid. p 324.
7. Ibid. p 277.
both agree in the assertion that the proper approach to reality is through mind itself; both insist upon mind as the source of all values, and upon the Absolute Valuer as the Ultimate Source and Sustainer of all values. Further, such notions as that of the mystical and esthetic experiences as sources of greatest insight into reality, that there is an Absolute Valuer or Spirit which is the ultimate ground of all existence, and the notion that all values are realized in this Absolute Valuer represent a thorough going Objective Idealism, approached from the standpoint of Natural Science as opposed to pure dialectic. As to whether Eddington has been directly or indirectly influenced by the Objective Idealists I am unable to give any historical evidence to that effect. It rather seems that his system was developed independently and from the standpoint of physical science. Whatever may be the source of influence, it is plain that Eddington arrives at a conception of God which is quite similar, if not identical with the conception of God maintained by Hegel and the Neo-Hegelians.

8. Ibid. pp 288-289.
9. Ibid. pp 221, 288, 324, 349.
C. A Critical Evaluation of Eddington's Conception of God.

A critical evaluation of Eddington's conception of God must be of a dual approach, namely, the logical basis which he offers to substantiate his conception of God and an examination of the conception itself.

1. Logical basis.

The logical basis of Eddington's conception of God is determined almost entirely by his special interpretation of Relativity as has already been noted. But both Whitehead and Northrop give a different interpretation to relativity. Also, each of them arrives at a different conception of God. And it may be added here that Eddington has no predominance of favor in behalf of his particularly mathematical interpretation.

Eddington finds another source of evidence in behalf of his conception of God in the nature of experience itself, which involves rational discrimination, cosmic orderliness and the existence of values. The axiological

1. Cf. Science and Modern World, Whitehead; also Science and First Principles, Northrop. These two accounts of the theory of relativity not only differ from that of Eddington, but also one with the other. Whitehead offers the most complete argument by far.
will be discussed later. As to the former argument it might be said that the neutral monists offer an account of reality which is orderly and, in certain instances, it involves rational discrimination. Also, both Whitehead and Northrop propose the same thing with a degree of success equally as cogent as Eddington. And in no case do these systems find it necessary to postulate Mind as the 'ultimate stuff' of reality.

Again, Eddington avers that modern physics is destroying Determinism by removing its materialistic basis. And it has removed such materialism by destroying the concept of Substance. First, if physics cannot tell us anything about reality, it cannot be used as a valid argument to determine it. Secondly, if physical laws are only statistical, or mere mathematical truisms, then we dont know if physics has really destroyed substance. Thirdly, even if determinism is destroyed, can one equate Indeterminancy with Mind? Eddington seems to get this idea of Ideterminism from his third law of nature. But here it seems that he is really transferring the concept of a material particle

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2. Transcendental law as opposed to the Identical and Statistical laws. This law is the law of individuality for Eddington, and is based on Heisenbergs principle.
to the concept of personality, or, he changes a statistical law into a transcendental law. This seems merely verbal as has been pointed out already. Even if there is an instance of indeterminancy such is no valid ground for super-naturalism. For there was a time when men had not the instrument for determining the densities of substances by the angle of minimum deviation of light.

Further, Eddington argues that all relations are subjective. But there are many systems, equally as plausible, in which this does not follow. I refer particularly to Neutral Monists and to Whitehead.

Again, Eddington's basic argument for Spiritualistic mysticism is the assertion that we cannot know the essence of a thing. To this one may respond by referring to the doctrine of "focalized identity" as expounded by Professor Hall.\(^3\) Here the qualities are focalized into, and are the actual constituents forming the so-called 'thing' to be known.

2. The Conception of God Examined.

The conception of God arrived at by Eddington seems to approximate that of Absolute Idealism. It is therefore

\(^3\) To appear soon in The Monist.
enable to traditional idealistic criticism. And, as is true to form, Eddington is never able to give a satisfactory account of individuality in this World Mind. Also, as to the problem of evil he is willing to offer no solution, but tactfully asserts that the world spirit is the Creator and Ground of Conservation of all values. Nor does he reconcile the eternality of the world-spirit with the temporality of finite selves.

3. Eddington’s Strongest Argument.

After all it appears that Eddington’s strongest argument for the existence of God is Axiological. And yet, sensing the difficulties involved in such position, he is only willing to vouch for the plausibility of such hypothesis as that of the existence and nature of God as is here offered. It might be asked by way of Socratic criticism, Can plausibility serve the purpose of logical proof or existential reality?
CHAPTER II

GOD AS THE SUPER-MACHANICAL PRINCIPLE OF THE UNIVERSE.

1. Biography and Introductory.

John Scott Haldane, eminent British scientist and physician, was born at Edinburgh, Scotland, 1860. He received his education at The Edinburgh Academy, Edinburgh University and The University of Jena. While an undergraduate student at Edinburgh his chief interest, because of the influence of his brother, E.B. Haldane (later Viscount Haldane) was in Philosophy. While a medical student at Edinburgh, 1883, he revealed his philosophical interest in a contribution to the volume known as Essays in Philosophical Criticism. This volume was composed of the contributions of ten young men, and was edited by Professor A. Seth Pringle-Pattison and Viscount Haldane. Its purpose was to emphasize the importance of "distinguishing, and not confusing, the fundamental conceptions or axioms applied in different branches of knowledge." It appears that this problem

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induced Haldane to enter the field of science in which he has been engaged, in both teaching and scientific research, since 1885. He is at present honorary Professor and Director of the mining research laboratory at The Birmingham University, resident of the Institute of Mining Engineers, Fellow of New College, Fellow of the Royal Society, member of the Royal College of Physicians as well as an honorary member of the Royal Society of Medicine. He has been in charge of several Government enquiries on public health questions, and served numerous Royal commissions. His publications are numerous, especially on subjects connected with mining. His principal researches have centered around investigations of Respiration and Ether, having become an International authority on both. To him is given credit for the invention of the 'gas mask' during the recent great war. A survey of his writings and lectures reflects the scope of his interests. Besides his contribution to the volume known as Essays in Philosophical Criticism, 1883, other works of his which are relevant to his philosophical position are as follows.—Mechanics, Life and Personality, published, 1913. It is composed of lectures delivered in the Physiological
Laboratory of Guy's Hospital as a University course for senior students during the month of May in the year of publication. In these lectures he discusses then criticizes mechanistic Biology from Descartes to the present. He not only contends mechanism is unable to offer an adequate theory of life, but goes a bit further to say it cannot be extended to nature as a means of interpretation. It follows that personality, which is itself an organic and continuous whole, is beyond the scope of mechanistic interpretations. That is, time, space, mechanism life and personality as generally meant are only logical relations, and all attempts to explain life as an isolated entity are futile. Organism and Environment was published, 1917. It is composed of his Ezra Ely Silliman Lectures delivered at Yale University, 1916. Its content is in the main a reiteration of the content of the former work, namely, to point out the inadequacy of both mechanistic and vitalistic biology to give any plausible explanation of the nature of life. He begins in this case with the nature of breathing as it is related to the life of an organism. With this as a point of departure he develops an argument against

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any mechanistic explanations of life, using as his basic evidence the fact of organic readjustment and reproduction. Life and Finite Individuality, an essay read at the joint session of the Aristotelian Society, the British Psychological Society, and the Mind Association, June, 1918, was published the same year. Here again he defends the same thesis that life is a process which cannot be explained mechanically. The New Physiology was published, 1919, and its purpose was to liberate Biology as a science from Physics and Chemistry, to free it from mechanism. This work continues the defense of the thesis that the nature of life is such that it transcends the scope of mechanism in any form. Respiration, a more detailed account of the Silliman Lectures, was published, 1922. It gives a more complete account of Haldane's so-called 'New Physiology.' Here the purpose is fundamentally the same, namely, to liberate Biology from Physics and Chemistry and at the same time point out the inadequacy of any mechanistic interpretation of life. The Sciences and Philosophy, Haldane's Gifford Lectures delivered at The University of Glasgow, 1927-1928, was published, 1929. It is in this work that his philosophical position is most fully given,
and its content is the fundamental source of data for the present undertaking.

From a survey of his works it is evident that the point of departure in Haldane’s investigations is the nature of life itself. He is thus led into biological science, and he has followed out the implications of the data from this source to the construction of a conception of the nature of reality. The cardinal point in every work is the unchangeable thesis that mechanism cannot explain life with its manifold of change and unity-in-diversity.

Haldane’s point of departure in philosophizing is the character of the data of biological research as to the intrinsic character of life. To begin with, he is a physiologist and physician whose background is in the philosophical world. And it appears that this background is in the main the causal factor which set him in search of a concept of reality as a whole through a medium consonant with his training in biological science. His subsequent affiliations with the mining industries led him to study respiration. As a physician and physiologist his interest developed in organic behavior, the consequence of which is a keen interest in the nature of life.
itself. And if Eddington's point of departure in deriving a conception of reality is the theory of relativity, then Haldane's is the unique and inexplicable nature of Life itself. Beginning with this postulate, he builds up an argument for a background in which life itself has its being and from which it cannot be isolated, namely, a world-spirit or a manifold personality in which individuality has its being only as a minute manifestation of the manifold unity.

2. Development of Haldane's Philosophical Position.

Haldane prefaces his venture into philosophical speculation with a frank acknowledgement that his final position is based upon studies in biology, and especially physiology. The most complete expression of his philosophical position is to be found in his Gifford Lectures. It is here that all his previous efforts become formulated. For this reason this work is the basic source of evidence.

Haldane starts with the assertion that each branch of science deals with an aspect of experience peculiar to its own subject-matter, while philosophy takes into consideration the whole of experience. In this manner it

1. The Sciences and Philosophy, p. vi.
2. Ibid. pp. 3, 4.
comes into living contact with both the principles of
the sciences and religious beliefs. As he states it in
an earlier work, "In science we are always dealing with
partial and incomplete aspects of reality, with abstrac-
tions which are not only convenient but ultimately un-
avoidable. Sciences are the application of abstract logi-
cal principles to a reality which they can never express
fully. ... It is the business of philosophy to point
out and define these abstractions, ... to direct us to
that spiritual reality which is the only reality; and
from this point of view philosophy and religion are one." 3
It is the misconception of the respective functions of
science and philosophy that has given rise to a pseudo-
metaphysics, of which a "classical and extraordinary
important example" is the results of Newton's 'Princi-
pia.' 4 Here we find the first anti-materialistic im-
plication as to the nature of reality in the manner in
which the metaphysical deductions from classical physics
are dismissed.

Haldane proceeds to delimit his approach to the
problem to a study of two of the foremost departments

of science, namely, the physical sciences and biology. The former department deals with inorganic phenomena while the latter deals with organic phenomena, and, up to a certain point the same principles are applicable to both. But beyond this point the application of a common principle is impossible. There are characteristics of organic nature which transcend the mechanisms of physical science. This essential attribute of biological science is the self-activity of the living organisms which compose its subject-matter. This characteristic is a manifestation of life itself. The coordinated self-activity of the organism with its environment, the principle of metabolism and the reproductive activity of types or species are all beyond any explanation based upon the principles in common with the nature of physical science. For life cannot be considered solely from a physical standpoint, in which account all things become a flow of atoms and electrons. To quote: "The widely spread popular belief that the phy-

5. Ibid. pp. 6-7.
9. Ibid. pp. 11-12.
sical and chemical structure of a living organism ac-
counts for its behavior is baseless.\footnote{10} In dealing with
organisms and their activity biological science re-
veals evidence that organisms are in constant interac-
tion with their environment, and that this activity is
on the whole so directed as "to maintain in each orga-
nism a normal and specific condition."\footnote{11} Further, this
normality is bound up with the environment with which
it interacts, and "we cannot distinguish between normal
living structure and its normal environment, and con-
sequently cannot say where living structure ends and
environment begins. We can thus discover no spatial
demarcation between what is living and not living. ... 
Such being the case, the conception of reality or na-
ture to which we are directly led by the study of life
is very different from that to which the isolated con-
sideration of what we distinguish as inorganic pheno-
mena leads us. For this reason biology must be regarded
for the present as an independent science guided by a
conception different from the mechanical conception or-
dinarily satisfactory in physical science.\footnote{13}
Beginning with the premise that the only valid approach to reality is in life, and, that biology is the science which treats life, Aldane not only asserts that certain aspects of biological data transcend the mechanism of physics and chemistry, but argues for the independence of biology as a science. In defense of his position he proceeds to give an historical and a critical account of the evolution of biology from Descartes to the present. The earliest appearance of biology as a science was the mechanistic school which began with the works of Descartes in the early seventeenth century. 14 This same school reached its most complete expression in the vitalistic biology of Charles Darwin, 15 Descartes advocated a thorough-going mechanistic, physico-chemical biology. This is the basic postulate upon which his two biological works, De Homine and De Formatione Foetus, depend. His account of blood circulation muscular contraction, glandular activity, and in fact every aspect of living organisms, was based upon purely physical, chemical and physico-chemical processes in organism as such. At the same time Kepler offered a

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15. Ibid. p. 36.
mechanical explanation of vision, and Harvey had indicated how the blood, driven mechanically by the pressure from the heart, and guided by vales, is circulated round the body. The movement towards a triumph of mechanism was continued by nineteenth century biologists. Schwann announced his 'cell theory' which explained all whole living organisms in terms of parts, 1839. In 1845 Mayer announced his correlation of muscular activity and oxygen consumption, or the law of the conservation of energy. In 1847 Helmholtz submitted a more detailed account of Mayer's work. In 1859 Darwin extended the mechanistic conception to the origin and structure of organisms.

Preceding and contemporary with mechanistic biology, is the vitalistic biology of Aristotle and Hippocrates. And as Descartes formulated a mechanistic theory of life, Stahl, author of the phlogiston theory, formulated a vitalistic theory of life in which all bodily processes depends upon the soul or entelechy as their guiding and impelling source. The former phy-

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16. Ibid. p 27.
17. Ibid. p 29.
19. Ibid. pp. 36-37.
20. Ibid. p 53ff.
21. Ibid. p 59.
siology of mechanism appealed to theologians in that it allowed for supernatural teleology, while the physiology of vitalism appealed to men engaged in the medical profession. About 1800 the Montpellier School of medicine became a center for vitalistic exponents. Outstanding vitalists sprang up among which may be classed Johannes Muller, Liebig, Hans Driesch and the eminent psychologist, MacDougall.

The evolution of biology itself has resulted in an element of doubt as to the validity of both mechanistic and vitalistic biology. Both have failed in their attempt to account for life. Reaching their most complete expression about the same time, the same problem challenged the first principles of each, and destined both to partial completeness only, namely, the problem of accounting for life in view of its manifold activity. Mechanism can give no reasonable account of the exact coordination of familiar physiological processes such as the constancy of the quantity of sugar in the blood,

22. Ibid. p. 50, 60
23. Ibid. pp. 61, 65. Liebig is an authority on bio-Chemistry.
24. Ibid. pp. 36, 65. Both mechanistic and vitalistic biology reached their zenith about the middle of the nineteenth century.
the constancy of water in the blood, the constancy of the concentration of CO₂ in the lungs and the interdependence of the circulatory and cell life of an organism upon respiration. The coordinated physiological activity whereby these conditions are kept practically constant within the organism, even when their respective external sources change, cannot be accounted for on the basis of mere physical and physico-chemical principles.²⁵ Vitalism, on the other hand, is quite an unsatisfactory hypothesis.²⁶ For contemporary vitalists²⁷ not only agree that the vital principle can act only in conjunction with suitable physical and chemical causes, and that it is a regulative principle which requires for its very existence a physical or chemical process, but they go so far as to acknowledge that nothing can be known of such entelechy through scientific experimentation. And thus admitting the mechanical on the one hand and an invisible and intangible 'something' on the other which exists within bodies to interfere with organisms, "we never know 'where we are'". The assumption will

²⁵ Ibid. Chapter III.
²⁶ Ibid. pp. 70-72.
²⁷ Cf. Sebra Eldridge's 'The Organization of Life;' also MacDougall's Principles of Psychology.
'explain' anything and everything which occurs in a living organisms; but in practice it cannot be definitely tested in the investigation of individual phenomena, and is thus practically useless in detail as a working hypothesis."^{28}

Life cannot be accounted for from an abstract point of view such as the concepts of mass an energy. Neither can it be isolated from its environment. It must be interpreted in the light of observation and experience.^{29} Accordingly, every branch of science deals with one aspect of the world in which there is life. But once the independence of biology is fully recognized by relieving it of mechanism, it becomes obvious that the phenomena with which it deals differ both in complexity and kind from physical and chemical phenomena, and that this very complexity gives to it the distinction of being not only a unique science, but also the science in which the clue to a valid conception of reality is to be found.^{30} In this manner Haldane introduces his basic postulate that the proper approach to reality is in life itself, and, since biology treats

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28. Ibid. p. 70.
29. Ibid. p. 77ff.
30. Ibid. pp. 90, 91, 92.
life as its subject-matter, biology is the science through which one must begin search after metaphysical postulates. This is clearly expressed in the following manner: "The very nomenclature of biology embodies the conception that life, in whatever form it may occur, occurs in a specific whole in which the parts and actions are essentially related to one another, and cannot be isolated without destroying their nature." 31

Apparently realizing his dogmatic assertions as to the primacy of biological science, Haldane readily compromises. 32 Although biology as a science has gradually demonstrated itself to be the most appropriate science as a possible indication of a plausible metaphysics by taking as its subject-matter living organisms, its evidence can never lead beyond suggestion. For despite its progress it must remain loyal to the criterion of science. It deals with the effects of organisms, or renders a description of their activity. 33 That is to say, it deals with structural relations of

32. Ibid. Chapter X. The whole chapter expounds the thesis that no science is more than a partial and fragmentary view of reality; thus there is need for philosophy.
33. Mechanist, Life and Personality, pp. 137-140.
organisms, which are merely an expression of life, and is never able to deal with life itself. In face of such problem he is willing to conclude that biology as a science can at best only suggest to us the nature of reality, but by the very nature of its subject-matter it is to be preferred over physics and chemistry.

Faced with the problem of organic activity in its highest forms Haldane makes a transition from biology to psychology. Also, in asserting on the one hand that biology is the cardinal science for metaphysical suggestion, and on the other that it can never go beyond metaphysical suggestion, he acknowledges another problem insoluble by purely biological principles. These difficulties emerge in a higher step up the hierarchy of sciences, namely, psychology. From this point onward it is emphasized that "the psychological interpretation of visible and tangible experience is just as indispensable as the physical or biological interpretation and in actual fact this is always conceded in practice. ... Further, not only is there a visible world of life, but also a visible psychological or spiritual

34. Organic activity involving personality, and consciousness, desires, vales, etc.
world of interests and values." It is at this point that the primacy of the status of psychology as related to the other sciences becomes the foremost issue. But even psychology has not escaped materialistic and vitalistic influences. It was the influence of mechanism which produced animistic psychology with its philosophical dualism. But both the animistic psychology which classical physical science produced and vitalistic psychology have failed to account for conscious experience and conscious behavior. Again one finds Haldane apparently compromising after so exalting psychology. Even psychology is quite an incapable guide into metaphysical speculation. For it is a science, and science only deals with special aspects of experience. This abrupt change of emphasis seems to be the symptom of an intense desire to get to philosophy as quickly as possible, as is evidenced by the statement, "this science brings us to a point where we require more than science." Thus the apex of the hierarchy of the sciences is philosophy.

Haldane asserts that the need for philosophy is

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36. S.F. pp. 119, Chapter VIII.
37. Ibid. p. 161.
38. Ibid. p. 174ff.
paramount in deriving any plausible conception of reality. The basis for such statement he finds in the ways in which reality manifests itself, namely, in life and in conscious behavior. Any world-view must account for both factors, and conscious behavior cannot be explained in terms of life, although it is equally as real. Secondly, no single science has been able to fully account for both life and conscious behavior. But "any consistent or philosophical account of nature must cover conscious experience." And "since we cannot interpret conscious experience in terms of mere life, and far less in terms of physical conceptions, there is no escape from the conclusion that behind the appearances of a physical or biological world we are in the presence of a psychological or spiritual world." It is in this manner that Haldane immediately introduces his conception of reality after a general survey of the natural sciences. This reality is a spiritual unity, and is thus transcendent to spatio-temporal relations in virtue of its organic unity and time-transcendent experience. Neither space relations

39. Ibid. p. 163.
40. Ibid. pp. 174, 178, 179.
nor time relations are external to its all-inclusive existence, and "we cannot get outside of this spiritual unity" by going either forward or backwards in time. 43

Haldane feels certain that no science can arrive at any such conception of reality which will so coherently account for experience, 44 and even philosophy itself must presuppose some common background of all the nature of experience and in this wise inclusive of all the individual sciences. 45 And "it is of its very nature that the universe of our experience ... must be a spiritual world of interests and values, and that the interests and values are not merely subjective, or those of a particular individual, but objective, since all can enter into them, and there is nothing outside of them in experience. In them the whole of our experience is unified as the active manifestation of one spiritual universe. ... The Reality of this spiritual unity sums up for us the message of philosophy." 46 At this point he introduces an axiological argument which relegates the so-called material world to the status of mere appearance. The world which science presents is only an ideal world "the real

44. Ibid. Chapter XI. pp. 312-316.
45. Ibid. p. 179ff.
46. Ibid. pp. 262-263.
world is the spiritual world of values, and these are in the ultimate analysis nothing but the manifestation of the Supreme Spiritual Reality."

It is in the manner indicated above that Haldane begins with biological concepts, and, following out certain implications, derives the concept of reality. Beginning with a contrast of biological and physical sciences, he establishes the independence of biology as a science in virtue of the uniqueness of its data. Then the limitation of biology as a science is pointed out. But its most far reaching significance is in its subject matter, namely, Life. Further, the interaction of all living organisms with their environment indicates that the world is a living world, and that life is not isolated, but continuous. That is, neither the physical nor the biological interpretation of reality is any more than a practical make-shift. It is only in the higher organisms that biology must be supplemented with psychology. But even these higher organisms are merely

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47. Ibid. p. 233.
49. Cf. Respiration, pp. 397-398. Here one finds experimental data to justify the view that life is all pervasive and not isolated in spots.
higher orders of organic life, and in this sense biology
and psychology have no rigid line to separate them except
that the latter implies phenomena in relation to con-
sciousness. 50 This phase of life or organic activity in-
troduces the cardinal issue, namely, the nature of con-
scious behavior. But just as biology finds on its lower
levels continuous and beyond the scope of any purely
biological interpretation, 51 so does psychology find
personality or life on its higher levels continuous and
beyond the scope of any purely psychological interpre-
tation. 52 In this wise Haldane finds personality im-
plicitly contained in life and life implicitly contain-
ed in reality. The world of experience is a living world
and is equated with nature 53 or the universe. The level
of consciousness is life at its highest level. It follows
that any approach to a valid conception of reality must
begin through life on its highest level, namely, through
consciousness. Such view can be arrived at, he argues,
only through a correct scientific conception of "what
mere life implies; for if we go wrong on this point, we

50. S.F. p. 93ff.
52. S.F. pp. 174-175.
53. Ibid. pp. 232ff. 245.
go wrong also on the interpretation of personality ... and consequently, we arrive at inconsistent metaphysics just as did Kant and Aristotle, by regarding a living organism as a self-contained individual." So the conception of life itself leads to the conception of conscious experience which is the only reality we know. And the intrinsic nature of conscious experience cannot be explained by any science, since no science can fully account for the manifold of experience. From this conclusion regarding the sciences in their relation to reality, Haldane proceeds to solve the problem by postulating a continuous background which forms the substratum for every science, and into which each science carves a little niche. This background is a world of experience. In carving its niche biology suggests such conception in its dealing with life at various degrees of organization, the highest of which suggests the key to reality. On the other hand the very nature of experience itself is such that many of its most characteristic features are not amenable to scientific explana-

55. Ibid. Chapter VI, p. 261.
tion, and this very fragmentary account of the whole experience by the sciences leads one to infer that they have their background in a spiritual world. For it is in experience alone, not in sciences, that we find desires, values and ideals which are public to all conscious beings. To this Haldane adds another step that, if the animism of classical physics is eliminated, individuality and consciousness fuse, and so-called finite experience become mere manifestations of Experience in which all desires and values are realized. Thus, "our universe ... can be nothing else but manifestations of one Spiritual Reality or One God."

It is in this manner that Haldane presents the thesis for what he calls a "Spiritual Realism". Both the materialism of classical physics and the positivistic abstractions of modern science are dismissed as mere products of consciousness as a means of mental economy, and consciousness becomes the key to a valid conception of reality. And yet the seats of individual consciousness seem to disappear in their fusion in the one spiritual consciousness. If this be true, then finite con-

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57. The Axiological Argument.
58. S.P. p. 179.
60. Ibid. p. 181.
sciousness may be merely an appearance and cannot be trusted to lead one to reality. If it is real we must have a new interpretation of fusion into the spiritual background. Again, the term "Spiritual Realism" which he gives to his metaphysics must be construed as meaning only that the spiritual whole is the Real, and that all other is appearances, if consistency is to be found in his system. This raises the problems of finite individuality and evolution which will be dealt with in the General Conclusion on Haldane's conception of God. It may not be beside the point to say just here that the methodology which is here employed seems largely one of negation.

3. Haldane's Conception of God.

The most signal problem for any Gifford lecturer now becomes a problem for Haldane namely, the problem of God. For it is the primary aim of the Lectureship to stimulate thought upon, and to increase men's knowledge of the nature of God. As has been indicated, Haldane approaches the problem from the standpoint of biological science. His point of departure is the intrinsic nature of Life itself. Further, life in its highest
stages of organization is equipped with a factor which eludes biological description, namely, consciousness. And the very nature of experience itself, including desires, values, ideals, purposes and ends, is of such as to warrant the postulation of a universal ground for all experience. This universal ground of values is God.¹ And it is in Him we live and move and have our being.²

In arriving at his final position Haldane accepts what he calls a Spiritual Realism,³ a view which defends the thesis that only the spiritual is the real. This spiritual unity pervades all personalities just as bodily organic unity pervades every cell, so that we perceive our universe as an objective community.⁴ But in the final analysis there can be but "one spiritual unity or personality."⁵ That is, "the real world is the spiritual world of values, and these values are ultimately nothing more than the manifestation of the Supreme Spiritual Reality, called in language of Religion, God."⁶ To conceive the practical world of lay experience as the ultimately real, he continues, is a product of ani-

¹. Ibid. pp. 266-277, 283.
². Ibid. pp. 130, 266, 281, 283.
⁴. Ibid. p. 130.
⁶. Ibid. p. 283.
mism which emerged out of the materialism of classical physics. What we really interpret as physically determined is only that which is imperfectly seen, and behind all appearances is the Supreme Spiritual Reality. And "our faith that this is so is firmly grounded, so that we can walk through the valley of the shadow of death without fear." This Spiritual Reality is a Spiritual Unity which manifests itself in all experience. It is the Ultimate Reality which is both Creator and Sustainer of the world of experience "leaving nothing outside of either space or time, since spatial and temporal relations themselves are nothing but its manifestations. ... In that Spiritual unity we live, move and have our being." Individual personality is artificial, and individuality partakes of reality only in so far as the Supreme Spiritual Unity is manifested in a finite center of experience.

Since this Spiritual Reality is equated or synonymous with God, it follows as a matter of course that the concept of Reality becomes the concept of God, God becomes the creator and sustainer of all values. He is the only

9. Ibid. p. 266.
reality and all other, including personality and individual selfhood, becomes relative. He is omnipresent and omnipotent in virtue of His ontological nature, the only reality. The Nature of experience is only "the manifestation of God, though certainly not nature as merely interpreted by the sciences."  

Haldane's conviction as to the conception of God leads him to aver that such a notion of the ultimately Real is a "presupposition of all ideas and all experience" since we can never pass directly from ideas presented by the sciences to higher experiences implicating interests, desires, values and ideals. Further still, he avers that such notion is the only one which reasonably satisfies the demands of experience itself.

In such metaphysical system life on its highest levels in the form of conscious beings is the highest order of God's manifestation in time relation. The dualism of organic and inorganic, mind and body, dis-

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11. Ibid. p. 289.
12. Ibid. p. 237.
14. The notion of time relations has to do with differentiating between conscious and non conscious forms of life. Haldane uses the concept to define the subjective factor in the process of experience, namely, succession.
appears and reality becomes a living whole which is an unceasing manifestation of God. The world of science is seen in the proper perspective as abstracted bits of reality for practical conveniences. Individual personalities are finite centers of experience which fade into a common background which is itself the spiritual unity and Ultimate World-ground, the Creator and Sustainer of all Values and interests; in the language of Religion, God. As the poet would say, we all become mere human bubbles upon the surface of the sea of God almighty himself, which by allying ourselves with the tide of His unceasing manifestation, may perchance become a ripple. For in reality there is God only.

Haldane’s argument to prove the existence of God is developed by the method of negation. His point of departure is to point out that the nature of experience is such that no sciences can fully account for it. Especially is this true with regard to axiology. And since no sciences can account for that which is obvious in experiences, the conception of God which he maintains is

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a necessary inference from the nature of experience itself. Further, he avers that the real hindrance to the conception of such a "Spiritual Realism" is the bad metaphysics of the sciences which always advocate a dualism in the constitution of Reality.\textsuperscript{17} But as to logical proof of the existence of God he is never able to go further than to aver that the existence of God is a necessary inference from the nature of experience. The problem suggested here may be stated in this wise: even accepting the existence of God as a necessary inference from the nature of experience, would it follow that the conception of God must be of such character as the conception of God which Haldane advocates?

Our most complete knowledge of God is to be found not in self-assertion, but in losing our individuality and becoming one with Him.\textsuperscript{18} Here one finds a strain of mysticism in the religion as it is interpreted by Haldane. We must forget ourselves, and yearn for Nirvana. As to further proof and knowledge of the existence of God we must content ourselves with the wise counsel that

\textsuperscript{17} S.P. pp. 266-267, 272-273. Haldane says such dualism is defended by both mechanistic and vitalistic biology, by mechanistic, animistic and Freudian psychology, and by all sciences built upon the hypotheses of Galileo and Newton.

\textsuperscript{18} S.P. pp. 290-291.
"It is only by an act of faith that all the variegated experiences which appear to us as Nature are interpreted as in the ultimate analysis spiritual." 19 States more precisely, other than the plausibility of the hypothesis offered by the indications of the data of science, our knowledge of God is at best to be found in realizing our true selves (perhaps as sons of God), and our certainty must be out of an act of faith. 20 To quote: "The existence of God and His love is a primary and fundamental fact, the presupposition of all experience or of what we call nature; and it is solely in our perception of spiritual values and faith in their unity that the existence of God is revealed to us. Through this faith we identify our wills with God's will when we strive for what presents itself to us as his or her own duty." 21

In the manner indicated above Haldane concludes with a world-view which is thoroughly Pantheistic. There is reality which is actually experienced, but it is Spiritual. Spirit is the primordial stuff of all existents, and it is "in that Spiritual Unity we live and

19. Ibid. pp. 179, 180, 211, 261; Haldane is finally forced to conclude that the validity of his Hypothesis rests upon faith in the unity and coherence of experience.
have our being."22 We partake of reality only in so far as God is manifested in us; that is, only in so far as we are ourselves spirit. Nature itself is only God's aggregate manifestation in the creation and sustaining of the world of experience, and God is both in and around us.23 Thus Haldane reduces every so-called finite center of experience to a relative focus in the Absolute and in the end presents one with a Spiritualistic Pantheism of the same type as the Pantheistic Cosmology arrived at by Eddington.

4. General Conclusion.

A. The degree to which Haldane carried out the purpose of the Gifford Lectureship.

Haldane's method of procedure in developing his philosophical standpoint is quite consonant with the ideal of methodology which the Lectureship sets up. For, beginning with the conceptions of life as accounted for by the sciences,1 and especially as it is accounted for by biological science, and pointing out the limitation

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23. Ibid. p. 266.

1. Sciences and Philosophy, Chapters I-III.
of any science in its attempt to fully account for Life in all its highest form as it is expressed in conscious behavior, and stressing the unity of Life in its many degrees of manifestation, and considering the reality of values and interests as they are found in Life on its highest organic levels, and then following up the implications of Life itself, namely, that there is a cosmic unity of all life activity on its lowest levels which unity is also the ground of values expressed by life-activity on its highest level which is expressed by personality, he develops the conception of a universe of activity which is a living organic whole. And from the implications of personality or experience itself in its realization of values which are spiritual, by inference he concludes with the conception of a spiritual universe on the assumption that a universe composed of two types of substance, organic and inorganic, spiritual and non-spiritual, cannot exist. This Spiritual Universe is identified with God. Haldane avers that such hypothesis

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3. Ibid. pp. 18, 77, 78, 147, 289, 290.
5. Ibid. pp. 289, 291.
8. Ibid. pp. 159, 163.
is both logically and experimentally necessary; logically necessary to give unity to experience, and experimentally necessary to give meaning to science.

To illustrate the steps involved in his method of arriving at the conception of God from biological data, I quote; "Just as in the biologically interpreted world what at first sight may seem to be individual lives turn out to be the manifestation of a wider life, so in the psychologically-interpreted world what appear at first sight to be individual centers of interest and values turn out, as shown by social relations to belong to social centers. Hence individual interests and personality are swallowed up in the wider interest and personality." 11 "In the words of Hegel and Neo-Hegelians, we are all suckled at the breast of the Absolute."

In the manner indicated above Haldane approaches the study of God which he concludes is the Sole Reality and the Unitary Ground of two views which on the surface appear to be very different, namely, the world of science and the world of experience. For the world of science

9. Ibid., pp. 211, 213, 231ff, 317.
10. Ibid., pp. 162, 177, 211, 251, 299, 317. Haldane makes science a mere product of consciousness.
11. Ibid., pp. 312, 313.
presupposes conscious behavior, and the very nature of the activity of consciousness implies an ultimate reality of which consciousness is an expression. Following out the implications of the nature of conscious behavior a point is reached where it becomes a necessity to accept the hypothesis of an Ultimate Spiritual Reality as the Substratum of both the world of science and the world of experience in order that unity be given experience itself. This Spiritual Reality is the ultimately real, omnipotent and omniscient, the Everlasting and Beneficent Father, the Creator and Sustainer of all values, and all that there is, is none other than the expression of His existence in progressive realization. The relation which men bears to God is one of part to whole. He is only one, although the

14. Ibid. pp. 153, 163. Here again Haldane's argument is one of negation. The first instance of negation is in the treatment of science, Chapter I-X. Each science falls short of an account for the whole of experience. By a process of elimination he derives a world of experience to be described by philosophy. In this instance the argument of negation is used to establish Spiritualism. We cannot have a world of two substances, matter and mind, body and soul. Neither does materialism account for the whole of experience. Therefore everything must be spiritual.
15. Ibid. p. 319.
highest, expression of God in the process of His mani-
manifestation. 16 To illustrate this point, I quote; "God
is thus the only final reality, and individual interest
or personality has its only reality in God, and ... ex-
istence in time is just the progressive manifestation
of God."17 Existence in time as here meant defines the
operation of consciousness as one of succession. Thus
man is made in the image of God, but can never be any
more than a mere image. In the language of Neo-Hegelianism
he is a differentiation within the Absolute, yet swal-
lowed up by the Absolute. And to realize his true self
he must identify his will with the will of the Absolute.18

Haldane's conception of the relation between God
and nature may be vividly illustrated by the following
references. The world popularly known as the external
world of science is only an abstracted formula for facili-
tation in dealing with specific classes of phenomena
of experience.19 And, "From the point of view of each
individual science there is a conflict of categories or
fundamental hypotheses with those of other sciences; but
from the wider standpoint of philosophy these categories

17. Ibid. p. 319.
18. Ibid. p. 319.
are only provisional working hypotheses. The world of our experience is a spiritual world. -; and this being so we must regard categories as only forms which the riches of this spiritual world pass through in the course of their ever fuller manifestation." Nature becomes the aggregate manifestation of God. To quote again: "It is only a narrow view of what is 'natural' that prevents our recognizing the presence of God everywhere within and around us. The spiritual world of values which we ordinarily recognize is something far less abstract and unreal than what we call the physical world. But the spiritual world is the world of nature unless we confine our connotation of the word to a mere idealized (scientific) conception of reality. When we look at the Spiritual World as a whole, it appears as one Spiritual Reality in which individual interests and values disappear as such. It is this which we recognize when we speak, in the language of religion, of God, ... Nothing else is real except God, and the relations of time and space (data of science) are only the order of His manifestation. Nature is just the manifestation of God." 

20. Life and Finite Individuality, p. 28.
Haldane finds the foundation of morals to be the principles of faith, loyalty and duty. These are necessary for our self-realization by partaking fully of the Supreme Spiritual Unity which is the source of all values. Through faith we become loyal to the preservation of values and interests; ... "we identify our wills with God's will when we strive for what presents itself to each of us as his or her duty." It may be noted that such position is very much like that of Royce on the foundation and principle of morals. Both emphasize faith in highest good or highest Spiritual value, namely, God, as the foundation of Ethics.

Haldane proceeds to account for the problem of evil in the following manner: Accepting the postulate of a Spiritual Universe in which all values are realized on the one hand, and the postulate that we can become one with this Spiritual Reality by aligning our will with Its will, on the other, he avers that we have an alternative which transcends the problem of evil. For evil is only imperfect apprehension of the unceasing manifestation of the Ultimately Real Spiritual Unity, - God. And

22. Ibid. p. 266.
23. Ibid. PP. 179, 180, 283, 284, 292, 317, 319.
24. Ibid. p. 317.
since His apprehension is complete, so often as we ally our wills with His will and become one with Him, so often do we avoid the appearance of evil. Even death is no longer an evil, but only God's manifestation in time relations which is itself a normal event in a wider life. It is only one of the steps in becoming 'like Him' and 'seeing Him as He is'. And this doesn't even imply immortality. In fact personal immortality is an absurdity arising out of the animism produced by the metaphysics of classical physics, which separates reality into 'souls' and bodies. It is only "faithful and gentle conduct, whether it is recognized or not by men, and whether it is prolonged or cut short" that unites us with God. The problem of natural evil vanishes, being found only the expression of imperfect apprehension. The speculative problem of personal immortality is reduced to an unnecessary sham. Personal freedom is achieved by "the losing of our fragmentary selves, and through faith in the love and omnipotence of God," attaining to union with Him. For "it is

26. Ibid. p. 281.
27. Ibid. pp. 234, 286.
surely in this union, and not in our continued individual existence, that we attain true immortality, and with it, freedom." So one finds Haldane taking a position much like the position of Bosanquet, namely, that natural evil is only incomplete apprehension, that personal immortality is not significant, and that 'free-will' must be found in becoming one with the will of the Good, — God.

B. The Historical Significance of Haldane's Conception of God.

Although their point of departure is different, the philosophical position of Haldane is quite consonant with that of Eddington. For both system emphasize reality as at bottom Spiritual. The Hegelian and Neo-Hegelian positions are vigorously upheld. The world of science is conceived as only a pragmatic and abstract scheme for dealing with specific data of experience. The universe is conceived as a world of Experience. Finite consciousness is conceived as a fragmentary manifestation of the Absolute Consciousness.

31. Ibid. p. 286.
33. Ibid. pp. 172, 261, 289.
and individual self-consciousness merges into its background, the absolute consciousness. Again Bradley’s thesis asserting the internality of relations is suggested. The postulation of the community of values and interests in the absolute is also upheld. Self realization is self denial, loyalty, faith and duty by which finite will is absorbed in the will of the Absolute. Evil is conceived as a product of limitation. The Absolute Spirit is the ground of all existence and the Creator and Sustainer of all values. In It all values are realized. This absolute Spirit is called, in the language of religion, God. In all these instances Haldane’s cosmology and conception of God reflect a position quite similar to, if not identical with the cosmology and conception of God represented by neo-Hegelianism, especially as it appears in the works of English and American Objective Idealists. So again one finds a thorough going Idealism arrived at from the standpoint of natural science, in which the fusion of Ger-

34. Ibid. pp. 266, 281.
35. Ibid. p. 319.
38. Haldane’s system reflects a greater influence of Bosanquet than of any other, especially in his conception of duty, self realization and immortality. In his conception of faith and loyalty and in his attitude towards the problem of evil he reflects the influence particularly of Royce. In his conception of the coherence of experience as the ultimate criterion of reality he reflects the influence of Bradley.
man Spiritualism and Cultural Idealism with Objective Idealism produces what Haldane prefers to call 'Spiritual Realism'. But such name can be equated with Objective Idealism. The degree to which Haldane has been directly or indirectly influenced by Objective Idealists in developing such position may be a problem for speculation only. But there is one suggestion of historical evidence in favor of the view that there was a direct influence of Objective Idealists upon him. I refer to the volume entitled Essays in Philosophical Criticism, 1883, which was dedicated to T.H. Green and prefaced by Caird, two early Objective Idealists. Haldane was one of the contributors to this volume and "the common bond between the writers was the influence of Kantian and post-Kantian philosophy as it had come down to them through the teachings of Hutchinson Sterling, Thomas Hill Green, Edward Caird, and F.H. Bradley." 39 Whatever may be the source and degree of external influence, it is evident that Haldane's conception of God is quite akin to the Hegelian and Neo-Hegelian conception of God as is expressed in the phrase "Das Geistige allein ist das Wirkliche". And the only justification for the term 'realism' in connection with

spirit is to be found in the method of approach to the problem. The conclusion is obviously a Spiritualism.

C. Critical Evaluation of Haldane's Conception of God.

1. Logical basis.

As has been indicated Haldane's logical basis for his conception of God depends almost entirely upon what he calls the nature of experience itself. But both Critical Realists and Personal Idealists give an account of the nature of experience equally as plausible, while the latter arrives at a conception of God altogether different and the former professes scepticism. The question suggested here may be stated thus: Is the conception of God held by Haldane a 'necessary inference' to give coherence to experience? If it is not, then Haldane's argument from the nature of experience may be questioned.

Again, Haldane's method of argument is always one of negation. The first ten chapters are concerned with showing that no science can account for the whole of experience. His interest is then narrowed down to biology,

40. Haldane’s basic argument as to the nature of experience which implies Reality is axiological: desires, values and interests are existentially real, yet not amenable to the sciences.
the science of life. But even biology cannot account for the whole of experience. The upper level of biology merges into psychology, but even psychology cannot give an account for the whole of experience. At the same time conscious experience must be grounded, else we witness an infinite regress in search for certainty. That in which it is grounded must be a unity and such unity cannot be composed of two substances, matter and mind, body and soul. Neither can materialism account for experience. Therefore this unitary ground must be ultimately Spiritual. But the question suggested here is one as to whether a positive fact of existence can be proved by negation. Is not negation merely a matter of elimination from a field of possibilities which can never be fully determined unless the field is exhausted until there is only one other possibility left? Even then one has the problem of being certain that all the possibilities except the one are exhausted. It is perhaps his constant shifting of point-of-view which is in the main responsible for the none too systematic character of this work.

2. The Conception of God examined.

One of the greatest problems of such a conception
of God as the one arrived at by Haldane is the problem of the status of the self in such a cosmology. If God only is real, then persons are appearances and individual self-consciousness is illusory, and Haldane has no right to begin with the nature of conscious behavior to arrive at the conception of the nature of Ultimate Reality. To do so would be to chase the bubbles while beholding the stream, and at the same time expecting the bubbles to lead one to the stream. Again, if personal values are transmuted beyond self-realization into the Absolute, how can values be realized by finite selves? And yet the nature of psychological experience is Haldane's point of departure for his conception of God. Further still, if the Absolute or Spiritual Reality only is real and the perfectly harmonious whole of Experience, how can change and evolution be explained? Haldane tries to solve this problem by making evolution only God's progressive manifestation of Himself. But even here to make sense one must tacitly assume the real existence of selves to which God is made manifest. He attempts to solve the problem of the External and the temporal by suggesting that the 'temporal' is only the successive manifestation of God. The ques-
tion suggested here is, who determines the temporal? Unless God does, then finite selves must. But God is non temporal, and we are left to believe that we ourselves determine the temporal experientially. This would suggest that the finite self is existentially real, and thus establishes temporality. Again, Haldane avers that the conception of God which he arrives at is a necessary postulate for the coherence of experience itself. It might be asked, what requires that experience be coherent if coherence means anything more than mere non contradiction? His argument further suggests the reality of the self as a center of experience. All these lines of thought suggest the reality of the self as opposed to the view that only the Ultimate Spiritual Unity is real.

Neither is Haldane successful in reconciling his conception of God with the problem of evil. It is made merely an imperfect apprehension of reality. All things work together for good. All values are satisfied in the Absolute, and in Him all evil is transformed into Good. But the iminence of suffering and misfortune in the actual empirical world is too obvious to be dismissed as mere illusion.
3. Haldane's Strongest Argument.

It is true that the axiological argument dealing with the non-physical aspects of experience, especially purposes and creative insight, is Haldane's strongest argument for the existence of God. But in reducing finite selves to mere appearances it seems that the real seat of purposes and creative insight is destroyed. Sensing this difficulty he arrives at the point where he is not so sure that his conception of God is a 'necessary inference', but that it is rather an act of faith only.
CHAPTER III

GOD AS THE PRINCIPLE OF LIMITATION.

1. Biography and Introductory.

Alfred North Whitehead, eminent British-American Mathematician and Philosopher, was born at Ramsgate, England, February 16, 1861. He received his education at Trinity College, Cambridge, from which were conferred upon him the degrees of Bachelor of Arts, 1884, Master of Arts 1887 and Doctor of Science, 1905. He became Lecturer and later senior lecturer on Mathematics in Trinity College, 1885-1911; lecturer on applied Mathematics and Mechanics, and reader in Geometry, University College of the University of London, 1911-1914; Professor of applied Mathematics and later chief Professor of Mathematics, Imperial College of Science and Technology of the University of London, 1914-1924. He was sometime Senator of the University of London, 1919; Dean of the Faculty of Science and Chairman of the Academic Council in the same University, 1921; and became Professor of Philosophy in Harvard University, 1924, a chair he still holds. He is a Fellow of the Royal Society, 1903; Fellow of the British Association for the Advancement of Science, 1931; member of the Mathematical Society and one time
president of the Mathematical Association, 1915-16. He holds the honorary degrees of Doctor of Science, University of Manchester, 1920; Doctor of Laws, St. Andrews University, 1921; Doctor of Science, Harvard University and the University of Wisconsin, 1925; Doctor of Science, Yale University, 1926. He was the first recipient of the James Scott Prize of the Royal Society, Edinburgh, 1922; received the Sylvester Medal of the Royal Society, London, 1925; and the Butler Medal, Columbia University, New York, 1930. He has held a prominent place as a Lecturer, among his most important lectureships being the Tawney Lectures\textsuperscript{1} of Trinity College, 1919, the Lowell Lectures,\textsuperscript{2} 1925-26, the Gifford Lectures,\textsuperscript{3} Edinburgh University, 1927-28, and the Vanuxem Foundation Lectures,\textsuperscript{4} Princeton University, 1929. His publications are numerous, and especially is this true regarding subjects which can in any wise be connected up with mathematical implications. One is perhaps justified in asserting that his principal researches and contributions have centered around mathematical concepts. By far the most complete

\textsuperscript{1} The Concept Of Nature.
\textsuperscript{2} Science and The Modern World, 1925; Religion in The Making, 1926.
\textsuperscript{3} Process and Reality.
\textsuperscript{4} The Function of Reason.
formulation of his system of thought is to be found in his Gifford Lectures \textsuperscript{5} delivered at Edinburgh University, 1927-28. Here he proposes a new cosmology.

The most important among Whitehead's productions not included above are as follows: 'A Treatise on Universal Algebra,' appeared 1898. His works on Geometry appeared soon afterwards. In 1911 his 'Introduction to Mathematics' was published, immediately following the appearance of the 'Principia Mathematica' in 1910, a product of a joint-authorship with Bertrand Russell. His 'Enquiry concerning the Principles of Natural Knowledge' appeared in 1919; and his 'Principle of Relativity', 1922.

Just as physical and astronomical concepts dominate the thought of Eddington, and biological and physiological concepts dominate that of Haldane, so do mathematical concepts dominate the thought of Whitehead. This is indicated by both his biography and the titles of many of his works. To illustrate this point I quote:

"Thus it comes about that, step by step, and not realizing the full meaning of the process, mankind has been

\begin{itemize}
  \item \textsuperscript{5} Process and Reality, p. vii.
  \item \textsuperscript{6} Axioms of Projective Geometry, 1906.
  \item Axioms of Descriptive Geometry, 1907.
\end{itemize}
led to search for a mathematical description of the properties of the universe, because in this way only can a general idea of the course of events be formed, freed from reference to particular persons or to particular types of sensation. ... Thus mathematical ideas, because they are abstract, supply just what is wanted for a scientific description of the course of events."

Here, scientific thought is meant to "see what is general in what is particular and what is permanent in what is transitory." Such supremacy of function is conceded to mathematics in each of his works, both mathematical and general, with perhaps one exception. In each of his other works one of three general cases is found, namely: a predominance of mathematical and mathematical-physical illustrations by mathematical equations and symbols; a predominance of descriptive mathematical concepts; or a predominance of mathematical and mathem-

8. Ibid. p. 11.
mational-physical implications. In some instances such forms the content of the first several chapters; in some others it extends over the whole book; in still others it is implicit throughout the book and explicit in the last several chapters.

The justification for such conclusion as to the superior status of mathematics, says Whitehead, is the fact that our whole culture or civilization is a mathematical-minded one which was created by our minds for the purpose of 'analysing the characteristics of vibratory existence.' Once created, we think and reckon only in mathematical terms. And, when we deal with mathematics, we deal with "one of the most important topics for thought." 

The preliminary survey indicated above sets forth Whitehead's point of departure in developing his philosophical position. To begin with, he is a metaphysician whose background is fundamentally mathematical. His major work, in which his metaphysical system is to be is his essay in cosmology. This work is a product of

12. Religion in The Making (Part III), and Science and The Modern World along with Process and Reality. In the latter the mathematical ideal under the caption of coherence extends over the entire work. In Part 3- The Theory of Extension, mathematical concepts are very clear.
"years of meditation" and is the result of "four strong impressions", he says, "nearly, an attempt to supplement the movement of historical and philosophical criticism of detached questions by a more sustained effort of constructive thought; a conviction that the true method of philosophical constructions is "to frame a scheme of ideas" and unflinchingly to explore the interpretation of experience in terms of the scheme; a conviction that all thought which is constructive is dominated by some such scheme which is influential in guiding the imagination; and a conviction that all efforts to sound the depths of the nature of things are, he thinks, very weak. With this challenge before him he proposes to develop a cosmology which shall satisfy the need.


Professor Whitehead's point of departure in philosophizing is a quest for a new basis of First Principles. Towards this end he proposes to construct a purely speculative metaphysical system whose purpose is "an endeavor to frame a coherent, logical, necessary system of

16. Ibid. p. x.
general ideas in terms of which every element of our experience can be interpreted: "interpretation meaning applicability to everything of which we are conscious as enjoyed, perceived, willed or thought; coherence meaning that the fundamental ideas in terms of which the scheme is developed presuppose each other such that in isolation they are meaningless; and necessary meaning that the nature of the system is its own warrant of universality in experience so long as one confines himself to that which communicates with immediate matter of fact. And since the incommunicable is unknown, universality may be defined by communication." The doctrine of necessity and self-sufficiency in universality implies an essence which forbids relationship beyond itself, "as a volitional rationality." This essence is the basis of First Principles in philosophy, and the goal for which speculative philosophy is in search. But he finds that the limitation of human insight and deficiency of language, and the nature of experience itself, are fundamental difficulties to contend with in any search for a

2. Ibid. pp. 5-6.
3. Ibid. p. 7.
4. Ibid. p. 6. The major difficulty he finds on the empirical side of experience, "we habitually observe by method of difference." Sometimes we see an elephant, again we do not. The result is, we notice an elephant when it is present because it is not always present.
ground of First Principles. These difficulties he proposes to overcome by developing a coherent scheme, the coherence sought to be preserved being "the discovery that the process or concrescence of any one actual entity (or thing) involves the (all) other actual entities (or things) among its components,"\(^5\) and thus we arrive at the conception of the solidarity of the world, a universe.

The main difficulty of philosophical thought, according to Whitehead, has been a product of its dealing with such abstract notions as "mere awareness, mere private sensation, mere emotion, mere appearance, mere purpose and mere causation,"\(^6\) which are ghosts of abandoned faculty psychology. To overcome this traditional fallacy\(^7\) he proposes a system which contains only four primary and universal notions, namely, actual entities, prehensions, nexus and ontological principle. The last three of these notions express the endeavor "to base philosophical thought upon the most concrete elements of experience."\(^8\)

Whitehead's point of departure from traditional

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6. Ibid. p. 27.
7. This error results from the "Fallacy of misplaced concreteness". Cf. *Science and the Modern World*, Ch. 3
philosophers is the assertion that modern philosophy fails to account for all the concrete facts before it for analysis. He arrives at such conviction in the following manner; modern philosophy is a product of seventeenth and eighteenth century physics and takes from it the notions of absolute space and time. The strict atomicity which results from such notions establishes the primacy of matter, for matter has simple location in space and time. This 'Fallacy of Simple Location' of instantaneous material configurations led to the 'Fallacy of Misplaced Concreteness' or the way of expressing more concrete facts under the guise of very logical abstractions. The universalizing of the scientific mode of thought in occidental civilization affected philosophy to the extent of accepting its basic postulates. The result was the Fallacy of Misplaced Concreteness in philosophy which is most emphatically illustrated in the notions of primary and secondary qualities. And "modern philosophy has been ruined. It has oscillated.... between the dualists who accept matter and mind... and the two varieties of monists, those who put matter inside mind and those who put mind inside matter."9

9. Science and Modern World, p. 32; Cf. also Chapters III-IV where Whitehead gives a full account of the relation of modern philosophy to physical science.
The crux of the problem according to Whitehead is this Fallacy of Simple Location, with its complementary, the Fallacy of Mislaced Concreteness. For here one finds a materialism which drags in mind to overcome certain difficulties of modern philosophy. The consequences of such error may be avoided by giving to philosophy a new First Principles which will not require the acceptance of either matter or mind as such, and will at the same time account for the more extensive facts of experience, justify induction and express a unity of the world. To this end he gives a new and original interpretation of the relativity of space and time, and in such manner as to avoid the acceptance of the 'physical' or material objects as the things related in space and time. Relativity becomes a function in the passage of nature.  

Having set his task before him Whitehead starts with the thesis that the fundamental character of reality is atomistic; an organic whole composed of events, and each event is itself a unity in difference, comprising in its own constitution interrelation with all

11. Events are also called ontal entities and actual occasions.
other actual entities in the universe. That is "actual entities ... are the final real things of which the world is made up."\textsuperscript{12} There are four types of entities in the universe, two hybrid and two primary.\textsuperscript{13} The primary types are actual occasions and eternal objects; the secondary, hybrid, feelings and propositions. But actual occasions (events) are the final real things. They may possess gradations of importance and diversity of function, but they are all on the same level in principles exemplified by actuality. That is, "the final facts are all alike actual entities; and these are the drops of experience, complex and interdependent."\textsuperscript{14} The most concrete element in the nature of an actual entity is a prehension, andprehensions reproduce in themselves general traits of actual entities. Prehensions refer to our external world and have the character of outward yearning or striving, involving emotion, purpose, valuation and causation. But they form no actuality apart from actual entities, and they form only one element in actual entities: their

\textsuperscript{12} (S.F) F.R. pp. 27, 113 Prin. of Natural Knowledge, p. 4; Theory of Relativity, p. 39; Concept of Nature, pp. 5, 13, 86; Science and Modern World, p. 102; Religion in The Making, part III.

\textsuperscript{13} P.R. p. 287; cf. Concept of Nature p. 5

\textsuperscript{14} P.R. p. 28.
subjective form, being determined by the subjective aim at further unification or satisfaction of the actual entities to which they belong. It is in virtue of prehensions that actual entities involve each other, forming a 'togetherness' which is called a nexus. And "the ultimate facts of immediate experience are actual entities, prehensions and nexus. All else is derivative abstraction."\(^\text{15}\) The ontological principle may be stated that whatever is, has a sufficient cause for so being. By applying the ultimate facts of immediate experience to the categories of existence,\(^\text{16}\) in view of the ontological principle, it is evident that all these categories except those of actual entities, and, in a vague way, eternal objects, are reduced to modes of prehensions within the prehending subject which is itself the actual entity so prehending. It follows that eight categories may be fundamentally reduced to two, namely, actual prehending entities and eternal objects.\(^\text{17}\)

Twenty seven categories of explanation\(^\text{18}\) propose clarification which may be thus summarized: The world

\(^{15}\) Ibid. p. 30.  
^{16}\) Ibid. pp. 32-33.  
^{17}\) Even the use of eternal objects are at times questionable. Such will be discussed later.  
is a process of the becoming of actual entities or creatures. In the becoming of any actual entity all other actual entities share; the potential unity of many entities acquires the real unity of one actual entity. In its process of becoming new prehensions, nexus, subjective forms, propositions, multiplicities and contrasts become, but no new eternal objects (potential form for the becoming actual entity). Every being is by itself a potential for every becoming or every item in the universe is involved in each specific concrescence (self realization of actual occasion). This is the principle of Relativity. Each entity is in process by reaction with the whole universe from its own locus with its own subjective aim as its internal drive, and no two actual entities can originate from identical universe. Each actual occasion is conditioned by the correlate universe. An eternal object is only a potentiality of an eternal object is realized in a particular actual entity, contributing to the definiteness of that actual entity. How an actual entity becomes determines what it is. This is the Principle of Process. The analysis of actual entities yields prehensions and every prehension consists of a prehending
subject, a datum prehended and a subjective form or the way the subject prehends the datum prehended. Prehensions of actual entities are physical; those of eternal objects, conceptual. Positive prehensions are feelings; negative prehensions eliminate from feeling.

There are many species of subjective forms, viz; emotions, valuations, purposes, adversions, aversions and consciousness. A nexus is a set of actual entities in the unity of relatedness constituted by their mutual prehensions. A proposition is the unity of certain actual entities in their potentiality for forming a nexus eventuating in a complex eternal object; the actualities being the logical subjects, the eternal objects being the logical predicate. Whatever is a datum for feeling has a unity as felt and whatever exists has a sufficient reason so to be (Principles of 'Subjective unity' and of 'Efficient and final Causation'). The fundamental types of things are actual entities and eternal objects; all else is an expression of various degrees of the community of these two.

To function is to contribute determination to the actual entities in the nexus of some actual world, and an entity is actual when it functions in respect
to its own determination. It is the natural function of an actual entity which makes it self-creative and enables it to transform the random element into coherence. This is the immediacy of an actual entity. Functioning in the self-creation of another actual entity is the objectification of an actual entity into the other actual entity being self-created. The final phase in the process of concrescence constituting an actual entity is one complex, fully determinate feeling, called satisfaction. Each element in the process of becoming of any actual entity has one self-consistent function (Principle of objective Identity). In a process of concrescence there is a succession of phases in which new prehensions arise by the integration of prehensions of the antecedent phase. In these integrations feelings contribute their subjective forms and their data to the formation of novel prehensions. This is done by successive contrasts each having emerged to a higher level than its immediate predecessor, and it continues till all prehensions become components in one determinant satisfaction.

During its process of concrescence each actual occasion experiences a constraint which is termed the
'categories of obligation'. In some measure every actual thing in the universe is constrained to be what it is in virtue of such obligations. Actual entities are devoid of indetermination and represent potentiality actualized. "They are complete and determinate matter of fact, devoid of all indecision. They form the ground of obligation."}

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19. Ibid. pp. 39-42. There are nine such categories. They are as follows:—1. The category of subjective unity states that the feeling subject unifies the many feelings forming its datum by virtue of its own unity as a subject. 2. The category of objective identity states that no element in the objective datum of the self realizing actual entity can play the role of a duplicity; each element has one self-consistent function only. 3. The category of objective diversity asserts that there can be no notion of diverse elements exercising an absolute identity of function in the objective datum of an actual entity, so far as concerns the functions of those elements in that satisfaction (self-realization). 4. The category of conceptual valuation asserts that from each physical feeling is derived a conceptual feeling whose datum is the eternal object which gives the definiteness of form to the actual entity or nexus physically felt. 5. The category of conceptual reversion asserts that secondary conceptual feelings originate whose data are partially identical with and partly diverse from, the eternal objects forming the data in the first phase of the mental pole (category 4). This diversity is the ground of contrast and is a relevant one determined by the subjective aim. 6. The category of transmutation asserts that, by integration of simple physical feelings together with the derivative conceptual feelings, a subject may transmute its datum into a nexus which itself becomes the objective datum entertained by the feeling subject. 7. The category of subjective harmony asserts that the valuation of conceptual feelings are mutually determined by adapting these feelings to be contrasted elements congruent with the subjective aim.
Whitehead asserts that his cosmology is based upon these categorical functions of actual entities, and that all subsequent discussion leads up to the categories, or is explanatory of them, or is considering experience in the light of these categories. Every actual occasion or ultimate actuality embodies its own essence and 'becoming' is a creative advance into novelty in which each self-identical ultimate actuality realizes its own concrescence. The notion of complete abstraction becomes self-contradictory; for the very notion of an entity means 'an element contributary to the process of becoming.' Nothing can be considered in isolation. This is the most generalized notion of relativity. The realistic notion of a 'vacuous actuality' which holds that there are actual things devoid of feeling (subjective immediacy) is sufficiently repudiated to cast shadows of doubt upon the efficacy of

(Cont. Note 19) This has to do with the subjective form of conceptual feeling. The category of subjective intensity asserts that the aim of the subject is at intensity of feeling in the immediate subject and in the near future. The category of freedom and determination asserts that the concrescence of each actual entity is internally determined and externally free.

20. Ibid. p. 44.
22. Ibid. pp. 33-9; Categories of Explanation, Nos. 1, 4, 18, 27.
23. Ibid. pp. 42-3; cf Categories of Explanation, No. 4
the notion of the 'inheritence of qualities in substances,' closely allied with it. These two notions are grounded on a misunderstanding of the true analysis of a presentational immediacy. 25

Whitehead finds the ultimate to be creativity or "the universal of universals characterizing ultimate matter of fact;" 26 the principle of novelty and concre-scence. It is the ultimate ground of all actual entities, and thus the ultimate metaphysical principle. It is synonymous with Aristotelian 'matter' or modern 'neutral-stuff', except that it is the notion of activity. It is the ultimate notion of the highest generality at the base of all being, and cannot be characterized. The character of creatures is such that they constitute the changing character of creativity, and in this is to be found the objective immortality of actual occasions. This changing character fulfils the notion of 'becoming' such that "there is a becoming of

24. Ibid. p. 43; cf. Categories of explanation, nos. 10-13. Here the notion that everything that is, is for feeling and to be felt, that is, all actual occasions.
25. Ibid. p. 43.
26. Ibid. p. 31; cf. also p. 11.
continuity, but no continuity of becoming. The actual occasions are the creatures that become, and they constitute a continuously extensive universe. Extensiveness becomes, but becoming itself is not extensive ... Thus the ultimate metaphysical truth is atomism. The creatures (of reality) are atomic ... extensive continuity is a special condition arising from the society of creatures which constitute our immediate epoch. But atomism does not exclude complexity and universal relativity. Each atom is a system of all things." 27

According to Whitehead such cosmology is of sufficient breadth to express more precisely the fact of experience. It not only proposes a system which accounts for the extensive facts of experience, but it is genetically grounded in that it "can claim for each of its main positions the express authority of one or the other of some supreme master of thought - Plato, Aristotle, Descartes, Locke, Hume, Kant." 28 It is Platonic in the sense that the actualities composing the process of the world are conceived as exemplifying the "ingression of other things which constitute the potentialities of

27. Ibid. p. 53.
28. Ibid. p. 63.
definiteness for any existence.\(^{29}\) That which is temporal (actual) arises from that which is eternal (potential), and the two are combined by the divine element, which is the final entity in the world. And this is the process "by which barren inefficient disjunction of abstract potentialities obtain primordially the efficient conjunction of ideal realization."\(^{30}\) That is, eternal objects correspond to Plato’s eternal ideas; the ingression of eternal objects corresponds to the impression of eternal ideas upon matter; and for both schemes the ultimate ground of that which is eternal is the divine element.\(^{31}\) This divine element justifies the Aristotelian principle that there is nothing in fact apart from things that are actual.\(^ {32}\) It follows that everything is somewhere in actuality and everywhere in potentiality, and to search for a reason for anything is to search for an actual fact. This principle is the first step in describing the universe as a "solidarity of many actual entities;" each actual entity being an act of experience arising out of data through a process

\(^{29}\) Ibid. p. 64.
\(^{30}\) Op. Cit.
\(^{31}\) Op. Cit. also pp. 70-73.
\(^{32}\) Ibid. p. 64. Whitehead’s ontological principle.
of feeling the data manifold so as to absorb them into
a subjective unity or an individual 'satisfaction.'
Feelings replace the 'neutral stuff' of certain rea-
lists. The significance of feeling here is closely
allied with Cartesian metaphysics which makes the es-
sence of an actual entity consist solely in the fact
that it is a prehending thing or a feeler 'cogito ergo
sum.' The significance which actual occasions have for
an actual occasion is analogous to the significance of
Locke's 'Idea' for the subject. For Locke, idea is the
object of thinking; for organic philosophy objects (e-
ternal objects, actual entities, propositions, nexus)
are data for feeling, and play quite an analogous role.
But Locke's error lay in the fact that he started with
such sophisticated problems as those of perception and
understanding instead of a mere neutral beginning ex-
pressive of the synthetic concrescence by which many
things in the world become the one actual entity of rea-
lity. That is, he began with consciousness, and thus
left unconsidered all lower levels of experience which
form the ground of consciousness. Even so, his 'abstract
ideas' correspond to 'eternal objects', his 'ideas of

33. Ibid. pp. 64-65.
34. Ibid. pp. 81-83.
particulars' correspond to 'actual entities' and nexus, his 'direct idea' corresponds to 'feeling', his exposition of the origin of 'complex ideas of substances' corresponds to the vector character of 'primary feelings' and his 'doctrine of power' enunciates the doctrines of the philosophy of organism. This same view of the significance of feeling was expressed by Hume in his basic metaphysical proposition which asserts that all ideas are derived from simple impressions and are correspondent to the.

35. Ibid. pp. 84-89, 91. These principles are: 1. Relativity; 2. Relational character of eternal objects whereby they constitute the forms of the objectifications of actual entities for each other; 3. The composite character of an actual entity (substance); 4. Power as making a principle ingredient in that of actual entity (substance). In the latter is found the ontological principle, and the principle that the power of one actual entity on the other is merely how the former is objectified in the constitution of the latter. Thus Whitehead equates power and perception in the prehension of actual entities alone. But perception in the form of conscious prehension requires in addition the conceptual prehension of eternal objects, and a process of integration of both factors. The doctrine of power is thus reproduced in Organic philosophy as 1. Causal objectification, in which what is felt subjectively by an actual occasion is transmitted objectively to the concomitant actualities superseding it; and, 2. Presentational objectification, which is how the actual occasion is objectified in virtue of its view of the present and its recollection of the past.

36. Ibid. pp. 132-133.
The appeal to the history of thought leads Whitehead to supplement those systems of philosophy which, in a measure, he accepts. The Platonic passive matter, upon which eternal ideas impress themselves, becomes an activity 'of actual occasions which is free during the ingestion of eternal objects in the process of concrecence, in virtue of the ninth category of obligation. That is, the concrecence of each event is internally determined (by eternal objects) and externally free. This principle in joint relevance to the ontological principle, suggests the whole philosophy of Organism, that, however far the sphere of efficient causation be pushed in the "determination of components of a concrecence," its data, its emotions, its appreciations, its purposes, its phases of subjective aim, beyond the determination of these components there always remains the self-creative unity of the universe."  

37 Each particular concrecence is to be referred to a definite free imitation and an equally qualified conclusion; the initial fact being macroscopic in virtue of its equal relevance to all occasions; the final fact being microscopic in virtue of its being characteristic of that occasion. The

37. Ibid. p. 41.
38. Ibid. p. 45, 75.
The former is 'primordial appetite', the latter is decision of emphasis. Such duality characterizes every event, and it was failure to realize this metaphysical principle that led Locke to be hampered by inappropriate metaphysical categories which he failed to criticize, thus limiting the scope of his philosophy.

The error in modern philosophies emerges from a misunderstanding of the "true analysis of presentational immediacy." Thus the result has been either an over-emphasis of the sensationalist doctrine of perception on the one hand, or the doctrine of extreme subjectivity on the other. These accounts of perception are the points of departure into metaphysical difficulties. Both doctrines are led into error by Aristotelian substance-quality categories and substance-quality logic. For they propose to deal with the whole of experience, whereas in truth they have their validity in only a limited part of experience, namely, vision.

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39. Ibid. pp. 75,76.
40. Ibid. p. 81.
41. Ibid. p. 43. Two false notions arise from this misunderstanding; 'Vacueus actuality' and 'Quality inherent in substance'. 'Out of the latter notion comes its correlative, the 'Subjectivist Principle'. The one is the ground of Sensationalism the other is the ground of Subjectivism (Kantian).
42. Ibid. p. 178f.
sumptions which result become established premises, and with such establishment comes the 'subjectivist principle' that the datum of an experience can be analyzed purely in terms of universals. This is what led Descartes, Locke and Hume into difficulty. They advocated the subjective enjoyment of experience according to substance-quality categories, which is self contradictory. For if the enjoyment of experience be a subjective product the substance-quality categories lose all claim to any fundamentally metaphysical character. Kant emphasized subjectivity and made objectivity its construction. To do so he made his acts of experience essentially knowledge. It is the aim of or-

43. Op. Cit. Modern accounts of perception, says Whitehead, is perception in its most sophisticated form. That is, cruder stages of perception are necessarily presupposed by visual perception, and the perception upon which modern philosophy is built cannot account for more primitive experience. Visual perception presupposes organization of two types of positive prehension (feelings), namely purely physical and purely mental, into an advanced orginative stage; the former being the ground of content or whatness, the latter being the ground of form or howness of the datum perceived. A detailed treatment of perception comes later.

44. These assumptions are: 1. The substance-quality concept expresses the ultimate ontological principle; 2. The principle or primary substance is always a subject and never a predicate; 3. The experient subject is always a primary substance. Cf. Ibid. p. 239.

45. Ibid. p. 234ff. The basis of this error is in the belief that universals have ontological reality as do events and eternal objects. They are in reality mere abstractions which elucidate description of experimental feelings, that is, derivative phases of experience.

46. Ibid. p. 241.
ganic philosophy to make subjectivity a construct of objectivity, and to account for the facts of more primitive experience. Knowledge itself becomes a derivative product, produced within the knowing object by its correlate existence, which is the universe exclusive of the subject in question.

Finally, after an appeal to the conclusion of modern physical science, 47 Whitehead concludes that we must avoid any cosmology which can never go beyond consciousness, thought and traditional sense-perception. 48 The thesis of the Philosophy of Organism avoids this difficulty in that prehensions are the ultimate characteristic of actuality; in that positive prehensions are feeling; 49 in that presentational immediacy is an impure prehension; 50 in that sense-perception is only

47. Ibid. p. 182ff. Modern physical science has destroyed 'Vacuous actuality' and 'Quality-substance categories'. Biology offers evidence that the welfare of the organism, and even its existence, depends upon its environment.

48. Ibid. p. 361f. There are levels of experience far below perception in the term or form of simple physical feelings. Perception is a high stage of presentational immediacy and simple physical feelings is the lowest stage. To begin metaphysics with perception is to begin to build on the second floor.

49. Ibid. p. 35.

50. This is meant that the pur physical feeling into the feeling object occasions a correlative mental feeling, and the two feelings thus become a synthetic unity of feeling in the concrescent object in question.
a mode of presentational immediacy; and in that consciousness and thought are only derivative phases of experience, experience being presupposed by them and have no metaphysical reality except in the sense that they are products of a higher phase of experience. Again, the primary metaphysical notions are actual entities or atoms of reality, prehensions or character and behavior of actual entities, nexus or various societies of actual entities representing enduring objects, and ontological principle or ground of efficient and final causation (process).

A word as to process. Each actual entity has as its correlative and as its data every other actual entity in the universe, and feels such correlative data directly and indirectly. The way in which an actual entity feels its datum is determined by its subjective form, inherited through primordial act of God, which is itself the correlative eternal object feeling. The subjective aim of each actual entity, that is, its yearning for more intense feeling through its aim at its own self-constitution, and whose initial aim is an

51. Ibid. pp. 54, 99.
52. Ibid. pp. 34, 101, 345ff.
53. Ibid. p. 46.
endowment which the subject inherits from the "inevi-
table ordering of things, conceptually realized in the
nature of God,"\(^{54}\) originates a vector prehension through
its yearning. The initial stage of the aim is rooted in
the nature of God and its "completion depends on the
self-causation of the subject-superject i.e. the subject
emerging or becoming. This process is defined by the
Categories(5,6,8,9) of Obligation, which, in connection
with the ontological principle, which they both illus-
strate and limitate, define the ground of process where-
by the universe at any instant of its concrescence, with
its various societies of actual entities whose nexus
form enduring objects, and with its eternal objects ex-
pressing its unlimited possibilities, defines Process
on the one hand and Reality on the other. That is, e-
ternal objects become the ground of permanence, actual
events, the ground of flux. It follows that the soli-
derity of the universe is arrived at by implication in
two ways through the nature of prehension, namely, the
overlapping of prehending entities in various socie-
ties which express relatively enduring objects,\(^{55}\) and

\(^{54}\) Ibid. p. 373.

\(^{55}\) This is suggestive of the doctrine of 'Extensive abstraction' which may be stated thusly: A moment is
by the efficient and material causes furnished each actual entity or nexus in the form of data for its con
crescence by the whole universe correlative to the actual occasion in question. Consideration of actual enti-
ties in the light of the first principle of cosmic solidarity is called morphological;\textsuperscript{56} of the second genetic.\textsuperscript{57} As a result, the contemporary world, when consciously prehended, is prehended as a continuum of extensive relations in which is given bare extension separated and discriminated by differences of sense data (feeling) alone, in which subjective quality (colours, sounds, tastes, smells etc) together with the perspec-
tive provided by extensive relationship, "are the rela-

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Note. (Cont. 55) A group of all those abstractive sets that converge towards the same ideal limit. Thus the notion of non-durational points and non-durational moments are suggested and there is no smallest or largest event. This also illustrates an event. Cf. Russell's doctrine of "Punctual-enclosure Series," Knowledge of External World, Chapter IV.

56. This refers to extensive connection just referred to. It is the basis of concepts of space and time and deals in the main with nexus. Cf. Ibid. p. 433f.

57. This refers to an internal consideration of the process of concrescence in actual entities.
tional eternal objects whereby the contemporary actual entities are elements in our constitution." 58

Thus Whitehead presents a theoretical cosmology which he feels to be of such scope as to fully describe every imaginable mode of experience. The 'bifurcation' of nature into matter and mind is replaced by a different set of First Principles. There is an underlying Energy of Activity which is at the basis of the universe. This activity is a most general notion, namely, Creativity or the "universal of universals." The ultimate data of science are "events" which are neither mental nor physical, but 'just events', possessing the so-called physical and mental only as attributes. Moreover, the physical and mental can exist in no other way than as attributes. The intrinsic nature of an event is 'merely an occurrence' of actual occasions or incidents of matter-of-fact experience. These events which constitute reality are themselves defined in

58. Ibid. p. 96f. This notion is akin to Russell's doctrine of Perspectives. Whitehead's eternal objects become mediators between entities, between the experient and the thing experienced akin to Russell's perspective. The realistic account of experience is forcefully suggested i.e. neutral monism. But, if such be true, Whitehead is making use of consciousness in the most primitive stages of experience.
terms of Eternal Objects and Creativity. That is, Creativity brings together eternal objects in such an impression as to form events. All events are internally related in virtue of mediation through eternal objects, which are themselves internally related on the one hand and dynamically related on the other. Thus there is a cosmic organism, namely, Reality. Space and time become functions in the 'passage of nature', instead of absolute qualities which are mere abstractions. Time is real for each event. It is both individual and a non-continuous process. Temporalization is realization, the succession of elements in themselves divisible and contiguous. Each event has its own time. All other is spatial. Permanence or enduring objects are accounted for in terms of repetition of a given pattern, and thus becomes an expression of relations between changing events. Traditional pri-

59. This suggests Russell's definition of a 'thing' as a "series of aspects which obey the laws of physics." cf. Knowledge of the External World, p. 117.

60. Whitehead gives a functional meaning to space through his doctrine of 'Extensive Abstraction.' Time is accounted for on the basis of reproduction or reiteration of a pattern or nexus in a duration; the repetition of the pattern in each part of the whole over which it extends. Note Whitehead's 'pattern' corresponds to the Greek 'form'.
Mary qualities are merely the external consideration of an event, while traditional secondary qualities are merely aspects of an external event or nexus as mediated to the locus of said secondary qualities through eternal objects. For eternal objects are always predicative while events always express the subject. The cognition of an event becomes its "for-itselfness," the consideration of an event from its own point of view. This same event viewed from any other point of view is considered as physical. 61 So Whitehead agrees with James that there is not a mind and a matter, but merely two ways of viewing that which is neither, yet both.

What we are conscious of directly, Whitehead says, is a prehension of aspects of other events of the one real universe. Consciousness is not an aggregate of images, percepts and kindred data as is assumed by the Subjectivist Principle. Events are the real things; mind and body are ways of viewing events; and the medium of knowledge between events is eternal objects which are themselves aspects of things, and all we can ever get is eternal objects, which, in virtue of their

61. Science and the Modern World, pp. 205f. Again we find Whitehead defining the mental as a finite hierarchy of eternal objects and the physical as an infinite hierarchy. This view seems contradictory to the former view.
double role as mediators, provide the way by which one event grasps other events. A further step into Whitehead's treatment of the origin and nature of psychic phenomena is significant.

We may begin a discussion of psychic phenomena by considering perception. One mode of perception in which there is clear and distinct consciousness of universal relativity, is of great import. Here the extensiveness of space and time are included, of which clarity in the former case is obtained in ordinary perception through the senses. This mode of perception is presentational immediacy, the mode in which the world is prehended as a 'continuum of extensive relations.' The contemporary world is objectified for us as objective reality, illustrating bare extension whose various parts are discriminated by differences

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62. Fourth category of explanation; every item of the universe is involved in each concrescence, or every actuality is a potential for possibility, or every 'being' is a potential for every 'becoming.'

63. Process and Reality, p. 95ff.

64. Presentational objectification. Here the relational eternal objects, or the eternal objects which express the formal constitution of the objectified actual entity, fall into two sets: one emerging from the extensive perspective of the perceived from the position of the perceiver; the other emerging from the antecedent concrescent phases of the perceiver (causal objectification). Cf. Ibid. p. 92ff.
of sense-data. These sense-data are supplied out of the past and the contemporary world is objectified for us under the aspect of passive potentiality. Relational eternal objects express the formal constitution of an objectified actual entity, be it the minutest particle or the whole world, by a function from a two way origination: by origination from the extensive perspective of the perceived actual entity from the position of the perceiver; by origination from the antecedent concrescent phases of the perceiver. In this wise direct perception of the contemporary world is reduced to extension \(65\) in which the world is the ground of both, all data for perception and all possibilities of perception, extensivity being synonymous with potentiality. But the function of the relational eternal objects \(66\) gives to the datum objectified into the senses a definite form or pattern and thus determines the actuality of prehensions into something apprehended or perception of some 'thing'.

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65. Extension defines, (1) our geometrical perspectives, (2) possibilities of mutual perspectives for other contemporary entities among themselves, and (3) possibilities of division. cf. Ibid. P. 96

66. Eternal objects, termed sense-data, are the additional content required to eventuate bare potentiality of the extensive continuum into real objects for the subjects, given for the subject's experience. cf. Ibid. p. 97.
This means that objects are 'given' for the experience of the subject, but the 'giveness' arises only from the functioning of the 'antecedent physical body of the subject,' which function upon analysis represents the influence of a more remote past which is common alike to the subject and to its contemporary actual entities. "Thus these sense-data are eternal objects playing a complex relational role; they connect actual entities of the past with actual entities of the contemporary world, and thereby effect objectifications of the contemporary things and of the past things." 67 To use Whitehead's illustration 68 of perception, when we see a chair, we see it 'with' our eyes; we touch it 'with' our hands. Colors objectify the chair in one way and the eyes in another as elements in the subject's experience. The eyes and hands are in the past and the chair is in the present. The chair is an objectified nexus. This nexus displays its constitution by the spatial region, which its perspective relations has, which region is in fact atomized by the members 69 of the nexus. Through operation of the

67. Ibid. p. 97.
69. Actual entities.
sixth category of obligation an abstraction is made from the multiplicity of members in the objectified nexus, and from all components of their formal constitution, 'except the occupation of this region'. The prehension here is termed the prehension of a 'chair-image.'

This perception of contemporary images in the mode of presentational immediacy is an impure prehension; that is, a prehension involving a derivative feeling originating out of pure physical prehensions of the physical world expressed by the 'withness of body' and a subsidiary pure mental prehension induced by the purely physical prehension in a synthetic unity. Such an account of perception in the form of 'presentational immediacy' presupposes two metaphysical assumptions, namely, (1) that the actual world condi-

70. Category of Transmutation. From every physical feeling is derived a purely conceptual feeling whose datum is the eternal object defining the actual entity or nexus physically felt. Then a secondary conceptual feeling arises with data partially identical with and partially diverse from the eternal objects forming the data in the first phase of the mental pole. When this derived conceptual feeling is integrated with the integrated simple physical feelings, that prehending subject transmutes the datum of the conceptual feeling into a nexus or an object being felt. cf. pp. 40, 384.
tions and limits potentiality for creativeness beyond itself, and (2) that the real potentialities are co-
ordinated, relative to all standpoints, as diverse
determinations of one extensive continuum. 71

Perception in the mode of presentational im-
mediacy is that form which merely rescues from con-
temporary vagueness a contemporary spatial region, by
means of a sensum, in respect to its spatial shape and
its spatial perspective from the percipient. 72 A more
primary form of perception is "perception in the mode
of causal efficacity." 73 In which the perception of the

71. Ibid. pp. 101, 103.
72. Ibid. p. 185.
73. Ibid. p. 184. The primitive character of per-
ception is inheritance of feeling tone. Each actual en-
tity and nexus irradiates data for feeling as well as
feels data itself. The data which it feels it uses as
material for concrescence and objectifies the feeling
tone in the manner of causal objectification or con-
crescence and the final objectifications for the con-
crescent subject becomes more complex. By contrasts
between the successive phases of objectifications,
only the original remains while others sink into the
background. Upon touching a stone there is a reference
to the stone and a reference to the hand. But the
operation of occasions along the arm pass into the back-
ground, and one is conscious of the feeling in his hand
as he touches the stone. This account of perception
in its primary form is consciousness of causal efficacy
of the eternal world by reason of which the percipient
is a concrescence from a definitely constituted datum.
It is analogous to Locke's Ideas of Reflection in its
world in the past is as constituted by its feeling-tones, and 'as efficacious by reason of those feeling-tones.' "The crude aboriginal character of direct perception is an inheritance. What is inherited is feeling-tone with evidence of its origin in other words, vector feeling-tone. In higher grades of perception vague feeling-tone differentiates itself into various types of sense, those of touch, sight, smell, etc. each transmitted into a definite prehension of tonal contemporary nexus by the final perciipient. ... In principle, the animal body is only the more highly organized and immediate part of the general environment for its dominant actual occasion, which is the ultimate perciipient. But the transmission from without to within the body marks the passage from lower to higher grades of actual occasions. The higher the grade, the more vigorous and the more original is the enhancement from the supplementary phase. Pure receptivity and transmission give place to the triggering action of life whereby there is release of energy in novel forms. Thus the transmitted datum acquires sense enhanced in relevance or even changed in character by the passage from the low grade external
world into the intimacy of the human body." 74

From the foregoing interpretation of perception, taken in connection with the categories of explanation 75 which such interpretation proposes to illustrate, reference by way of comparison with the limitations of other systems is quite important. Philosophy has been developed upon the basis of an epistemology built upon sense-perception as visual perception. "Philosophers have disdained the information about the universe obtained through their visceral feeling, and have concentrated on visual feelings. ... When we register in consciousness our visual perception of a grey stone, something more than bare sight is meant. The stone has reference to its past, when it could be used perhaps, as a seat. It has a history, and probably a future." 76 The mere sight gives one only a geometri-

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74. Ibid. pp. 182-183.
75. Ibid. p. 35. Categories 10-13 inclusive which repudiate the notion of 'vacuous actuality' and place feeling into each and every actual occasion, nexus or society as its essential characteristic and thus give subjective immediacy to every 'thing' in the universe. By so doing Whitehead asserts that the analogous notion of 'quality inherent in substance' is destroyed and the overthrow of an interpretation of perception based on sophisticated visual perception is effected, leaving possible ground for the explanation of lower phases of experience. Cf. pp. 92. Ibid. pp. 184-185.
76. Ibid. pp. 184-185.
cal perspective of relatedness of a certain spatial region contemporary to the percipient. The sensum 'grey' defines the region. But it is the feeling-tone, by which symbolic reference to the past is made, which gives finality and definiteness to the perception of any actual occasion as a definite "thing", and this feeling-tone is inherited by each actual occasion.

From the foregoing examination of Whitehead's doctrine of perception it is evident that 'feeling' is made the fundamental characteristic of existence; a characteristic of every actual 'thing' there is in the universe, and is potential in propositions; that this 'feeling' is the ground of communication; and that perception is a derivative feeling from the more primitive feeling inherited by the percipient subject. The metaphysical principle involved is that mind and matter, nature and perception, externality and internality are merely varying degrees of the intensity of feelings in a given concrescence, and are ultimately one and the same, namely, creativity. This principle is elucidated in the categories; 77 also in several other works 78 of the author.

77. Especially categories of Explanation and categories of Obligations, Supra.
78. Cf. The Concept of Nature, Chapter I; Principles of Natural Knowledge, Part 2, Chapter 5-7; Principle of Relativity, Chapter 2.
Presentational immediacy is perception of the contemporary world by the senses. It is a physical feeling of a high degree of complexity; being itself the product of more primitive physical feelings, conceptual feelings and transmuted feelings in an integration. This lower type of feelings which are presuppositions for presentational immediacy form that type of perception termed causal efficacy. The subjective form under which these objectified nexus are prehended gives to one his private sensations. Now, just as presentational immediacy is a derivative product, so is consciousness. Consciousness is the last and greatest element in the selective process by which an actual occasion observes the external totality of things by reason of its sheer actuality. It follows that consciousness presupposes experience, and not that experience presupposes consciousness. For it is only a special element in the subjective forms of some feelings, and arises only in a late and derivative phase of the concrecence of an actual occasion. And since the sub-

80. Category of Explanation, no. 13, p. 35. There are many species of subjective forms, viz., emotions, valuations, purposes, consciousness, etc. Also cf. Ibid. pp. 83, 85, 245. Consciousness arises only in a late derivative phase of complex integrations by the actual occasion, involving contrasts. "It is merely a special element in the sub-
jective form is the way in which the data (feeling) are received or become illustrated to the prehending subject, it follows that consciousness is merely a certain way in which a strain receives its feelings of the correlative world contemporary with it. It is a subjective form in 'the higher phases of concrescence' which illuminates antecedent phases in the sense that it is derived from them. "It follows," then, "that the order of dawning in consciousness is not the order of metaphysical priority." 81

The germ of consciousness is the feeling of contrast or a felt contrariness. "When the contrasts and identities of such feelings (contrary) are themselves felt we have consciousness ... It is the feeling of contrast of theory as 'mere theory' with fact as 'mere fact.'" 82 To illustrate; I recall that yesterday at the same hour I was seated in a Seminar. I am conscious that I was upon recollection of the general setting of the room and of the content of the general setting of the room and of the content of the discussion which was

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Note (Cont 80) jective forms of some feeling." An actual occasion may or may not be conscious of some of its experience. For its experience is meant its whole constitution of which consciousness may or may not be a part. Further, not even all mental operations involve consciousness. p. 130

81. Ibid. p. 246.
82. Ibid. p. 286.
carried on. Here, I demarcate this particular 'seminer-room-feeling' from other feelings and put it in contrast with the propositional feeling of having not been in this seminary room yesterday, which proposition may be stated, I was at home yesterday at the same hour. The contrast of these feelings makes me conscious of my having been present yesterday at the same hour, with a degree of certainty. That is to say consciousness originates in higher phases of integration, in case of human beings of transmuted feelings. 

The gravest error of traditional philosophy is in the fact that it has placed emphasis upon conceptual feeling alone in its account of consciousness, whereas a pure concept does not involve consciousness at all; rather, consciousness is derived from an integration of conceptual feelings with physical and transmuted feelings. It is a subjective form of feeling; but this subjective form requires an objective datum in order to be

83. Recollection of my presence in the Seminary Room yesterday is consciousness conferring importance upon what really is fact in reality; the proposition denoting my presence is consciousness conferring importance upon the imagination. "Consciousness is the way of feeling a particular real nexus, as in contrast with imaginative freedom about it." Ibid. p. 329.
84. Ibid. p. 362.
85. Ibid. p. 371.
real. The objective datum must be of a character ade-
quate to the subjective form, and this adequate cha-
acter may be assumed only when it is derived from
primary data which "carry in their individual selves
the reciprocal possibilities of objective synthesis." 86
This objective synthesis eventuates in consciousness.
Neither a pure mental feeling, conceptual or proposition-
al, nor a purely physical feeling, but only a syn-
thesis of both, can produce consciousness. 87 It is a
product of contrast by way of an intellectual feeling
in contradistinction from all other feelings. In such

86. Ibid. p. 369.
87. Ibid. pp. 369-371. A conceptual feeling is a
positive feeling of an eternal object as a datum; a pro-
positional feeling is one whose objective datum is a
proposition, which feeling is one of possibility; a
physical feeling is one in which the object as datum
felt is an actual occasion. Consciousness is originated
from a synthesis of conceptual and physical feelings in
which the former furnishes the form or definiteness of
the datum prehended and the latter gives the content of
emotional element to the datum prehended. Given these
two elements, we have both form and content and by
operation of eternal objects derivative from past ex-
perience, we label the datum as some definite thing.

88. Intellectual feelings form a type of compara-
tive feelings derived from the integration of a pro-
positional feeling with a physical feeling whose ob-
jective datum includes the logical subjects of the
proposition felt. In such feeling the datum is the
class contrast between a nexus of actual entities (body)
and a proposition with its logical subjects members of
feeling that which is felt is the class contrast between an enduring object or a society and a proposition whose logical objects or subjects are members of the society (i.e. a nexus of actual occasions). Certain entities are components in both contrasted factors, and the unity of the generic contrast arises out of the 'two-way function' of such entities, which unity expresses the second category of obligation, that every element in the objective datum of the satisfaction of an actual entity has one self-consistent role to play, and can assume no duplicity. The prehending subject entertains the two feelings under the category of subjective unity as a feeling subject, organizes these feelings such that each "of these actual entities obtains its own role of a two-way functioning in one generic contrast." 89 No objectified actual entity can play two disconnected parts as an element in the subject. Accordingly, what is in origin describable as two distinct ways of functioning of each actual entity in the two factors in a generic contrast, is subjectively realized as 'one role with a two-way aspect,' unified as 'contrast.' The unity in the subject con-

89. Ibid. p. 407.
tains contrasts between 'matter of fact' or what the objectified actual event contributes to the objectified nexus physically felt, and 'potentiality' of the same actual entity for assuming its assigned role in the 'predicative pattern' of the proposition, should the proposition ever become a reality. This contrast, called the 'affirmation-negation' contrast, is the seed of consciousness. To affirm or to deny is to be conscious. Affirmation-negation is the 'contrast between the affirmation of the objectified fact in the physical feeling, and the mere potentiality, which is the negation of such affirmation, in the propositional feeling;"90 the contrast between 'actuality' and 'possibility' in respect to 'particular' instances in this actual world.' Consciousness itself is merely the subjective form of the feeling of such contrast. "Thus in experience, consciousness arises by reason of intellectual feelings, and in proportion to the variety and intensity of such feelings. But in conformity with the seventh categorical condition,91 subjective forms, which arise as factors in any feel-

90. Ibid. p. 407.
91. Category of Subjective Harmony. "The valuations of conceptual feelings are mutually determined by the adaptation of those feelings to be contrasted elements congruent with the subjective aim." Cf. Ibid. pp. 40-41.
ing, are finally in the satisfaction shared in the unity of all feeling; all feelings acquire their quota of irradiation in consciousness." 92 Plain facts of conscious experience witness to this, Whitehead argues. For consciousness fluctuates in its illuminations; and at its brightest it illuminates only a small region focused upon the background of a large penumbral region of experience in only dim apprehension, at best. "This character of our experience suggests that consciousness is the crown of experience, only occasionally attained, not its necessary base." 93

From the foregoing account of consciousness, it is evident that the high degree of value that has been attached to consciousness is denied by Philosophy of Or- ganism. Consciousness has no metaphysical reality, but is only a subjective form; the only metaphysical reality being eternal objects and actual occasions, the basic character of which is prehension. This conclusion is evident from the following quotation: "In general, consciousness is negligible; and even the approach to it in vivid propositional feelings has failed to attain im-

93. Ibid. p. 408.
portance. Blind physical purposes reign. It is now obvious that blind prehensions, physical and mental, are

94. Physical Purpose:—The meaning is analogous to Bergson's intuition. It originates when the integration of conceptual and physical feelings does not issue in a hybrid feeling. But, eternal object as a mere potentiality, becomes determinant, by integration with itself as an element in the realized definiteness of the physical datum of the physical prehension. In such case the subjective form has acquired a special appettition, in respect to that realized eternal object as a realized element of definiteness in the physical datum, namely, aversion or aversion, desire or opposition; positive or negative response. This special appettition is derived from the conceptual feeling. The physical datum illustrates the definite number of eternal objects, but the physical purpose has focused appettition upon some selected eternal object. Physical purpose is, therefore, a species of comparative feelings more primitive than intellectual feelings. In this more primitive type of comparative feelings, the aspect of the eternal object which is pushed into the background is indetermination as to its own ingestions, although this is its prominence in intellectual feelings. When the data(nexus) is physically felt the corresponding eternal object is relieved of indeterminateness as to its ingestions. The result is a comparative feeling whose datum is the contrast of the conceptual datum with the actuality of the objectified nexus; the former is feeling a fact, the latter is valuing an abstract possibility. The new datum felt is the compatibility or incompatibility of the fact as felt with the eternal object as a datum for feeling; the real with the ideal. Two species of physical purpose occur. The one presupposes the following:—(1) a physical feeling, (2) primary conceptual correlate of physical feeling felt, (3) integration of physical feeling with its conceptual correlate. The other species originates according to the category of Reversion as applied to the mental pole, which reversions are the conceptions arising by virtue of the lure for contrast as a condition for intensity in experience. This lure is expressed by the category of Subjective Intensity.

(Note cont. on page 143).
the ultimate bricks of the physical universe. They are bound together within each actuality by the subjective unity of sim which governs their allied genesis and their concrescence. They are also bound together beyond the limitations of their peculiar subjects by the way in which the prehensions in one subject become the objective datum for the prehension of the later subject, thus objectifying the earlier subject for the later subject. The two types of interconnection of prehensions are themselves bound together in one common scheme, the relationship of extension."95

Accepting the generally advocated psychological interpretation of consciousness as the point of division between mind and not-mind, and regarding mind as the sum-total of mental states occurring in the lifetime of an individual, a two-fold difference is offered by the psycho-

(Cont of 94) Physical purpose explains the persistence of order in the universe; especially enduring objects. This is done by adversion and aversion as aspects in physical purpose. The character of the former secures the reproduction of the physical feeling as one element in the objectification of the subject beyond itself, thus giving the ground of permanence and persistence into the future. In aversion there is a tendency to eliminate one possibility by which the subject itself can be objectified into the future, namely, the possibility of the felt contrast. This is the ground of elimination or change. Both are feelings of valuation and seem to establish 'desire' and 'aversion'. Cf. Ibid. pp. 49, 286, 420, 423.
95. Ibid. p. 470.
logy of the Philosophy of Organism. First, there is no ground for the assertion that consciousness is the point of division between mind and not-mind; secondly, the implicit assertion that consciousness is the sum-total of mental states occurring in a lifetime is equally baseless for the same reason. Mentality permeates the whole of reality, and mind in the form of consciousness belonging to an actual occasion is a derived product, not by any subjective function in the form of a synthetic ego, but by the function of contrast-feelings.

As is described by the thirteenth category of Explanation, emotions, valuations, desires, aversions, judgments, intuition and every aspect of experience, of which some reach the levels of contrast that eventuates in consciousness, are merely subjective forms, or ways the prehending subject feels the data objectified for it in order that its own 'lure', which is motivated by its own subjective aim, might be at all times in a state of becoming satisfied, although never realizing complete satisfaction. The result is a psychology which does not place all aspects of experience in consciousness, but rather places many of the elements customarily held as

96. Ibid. pp. 48-49, 326.
97. Ibid. pp. 246, 408.
the content of consciousness on a level which forms the prerequisite ground out of which consciousness emerges, suggesting that "consciousness is the crown of experience, only occasionally attained, not its necessary base." 98

Such psychological account of consciousness and conscious content is just a reversal of the traditional psychological approach which begins with consciousness, and finds in it the various aspects of experience. For the Philosophy of Organism the characteristic trait of an actual occasion (also enduring objects, nexus and societies) is prehension; and prehensions have a 'vector character,' involving in themselves emotion, purpose, valuation and causation. 99 The most primitive type of experience is emotion. 100 Consciousness, as has been pointed out, is purely derivative.

'Judgment' 101 is a comparative feeling involving

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98. Ibid. p. 408.
99. Ibid. p. 28.
100. Ibid. pp. 49, 214, 246, 248, 323, 325.
101. Ibid. pp. 406-407, 412-419. The origin of intuitive judgment is as follows: (1) a physical feeling involving a certain eternal object among the determinants of the definiteness of its datum (indicative feeling) and the physical feeling whose objective datum includes the required logical subjects of its correlative proposition (physical recollection); (2) the feeling of either an eternal object as datum of the conceptual feeling derived from the physical feeling of 'physical recollection' or an eternal object according to the category of reversion (pre- (Note. Cont. on page 146)
consciousness. It is an intellectual feeling; a contrast of an objectified nexus with a proposition whose logical subjects make up the nexus as forming the datum. There are three species of judgment: (1) those feelings in the 'yes-form' in which contrast there is an additional ground of unity by virtue of the identity of the pattern of the objectified nexus with the predicate of the proposition (i.e. Agreement); (2) those feelings in the 'no-form' in which this ground of unity (1) is replaced by a contrast of 'incompatible diversity;' (3) those feelings in the 'suspense-form' in which the predicate of the proposition is irrelevant to the pattern of the nexus, that is, it is neither identical nor incompatible, but diverse from and compatible with the pattern of the objectified nexus. The first case is the ground of definite belief as a subjective form, the second case is the ground of definite doubt, the third case may or may not exhibit either a definite belief or a definite doubt as a subjective form.

(Cont. of 101) dicative feeling); (3) Imaginative feeling resulting from the integration of the indicative and the predicative feeling; (4) and the intuitive judgment derived from the integration of the imaginative feeling with the indicative feeling, or the "possible" with the "actual". Cf. Process and Reality, pp. 397-415.
The function of feelings in the universe makes every fact of experience an esthetic one in which the emotional pattern in the subjective form of any feeling arises from the subjective aim for more intense feeling and dominates the whole concrecent process. Of the higher phases of experience, physical purpose is dominant and consciousness is negligible. The theory of prehensions embodies a protest against discrete atomicity. Every actual entity prehends its correlative, which is the universe other than itself, and is prehended by every other actual entity in the universe. Each actual entity is prehended by the mediation of eternal objects; that is each actual entity is prehended by means of some element of its own definiteness as is expressed in the doctrine of presentational objectification. Such interpretation destroys the notion of 'universal' and 'particulars' which are age long anti-

103. Supra. It is regarded as the lowest level of higher experience. Cf. Op. Cit. pp. 427, 428, 470. The next and immediately higher phase of experience is that of propositional feelings. The highest phase of experience is that of consciousness. Propositional feelings mark a stage of existence intermediate between the purely physical and the stage of conscious intellectual operations, and lure purely physical feelings along into intellectualization. These three stages of feelings are termed purely physical purpose, pure instinctive, and intellectual feelings. Cf. Op. Cit. p. 428.
(Note the rest of the material on next page).
metrical terms. This notion is that of the 'universal' as that which can enter into the description of many particulars and the 'particulars' as that which is described by 'universals' the two notions correspond to traditional 'quality' and 'substance', expressable in the predicate and subject of propositions. The Cartesian notion of the 'particular' as an independent self-existing thing, has reigned supreme. But, the principle of universal relativity\(^{107}\) destroys this notion of particularity, also its antithetical notion. For the philosophy of organism, actual entities replace the notion of 'particularity' and eternal objects replace the notion of 'universality.' The actual entities are the real things; eternal objects are universals in the sense that they are indeterminate\(^{108}\) before their ingestion into actual entities. Their ingestion is the ground of definiteness, and in this sense the universal is a form of definiteness. It follows

\(^{104}\) Ibid. p. 443.
\(^{105}\) Ibid. p. 33. *Category of Explanation*, No. 4.
\(^{106}\) Ibid. p. 230.
\(^{107}\) Every actual occasion in the universe is a product of the correlative universe as its data for concretion, and is thus, not independent. Cf. *Categories of Explanation*. Numbers 4, 10, 13.
\(^{108}\) Ibid. p. 280
\(^{109}\) Ibid. p. 196.
that it is of the nature of the universal to mediate the possible into the actual. Each physical datum displays a multiplicity of possibilities; but upon the ingress of an eternal object, there is an actuality. This eternal object when 'considered in reference to the publicity of things' or its possibility of ingress into general, is a universal; but, when 'considered in reference to privacy of things, or its actual ingress into a particular actual occasion, it is a quality. "It refers itself publicly; but is enjoyed privately."

For this account of 'universals' it follows that the notion of "concepts" as a part and product of the mind is false. For universals have nothing to do with consciousness as a necessary prerequisite for their origination. The notion of the mind as abstracting qualities from substances is replaced by the two-way function of eternal objects. Consciousness has been dethroned and feeling now reigns supreme. That which once was Czar is now only a servant, although the most skillful among the servants of the household. That is to say consciousness, just as purpose, will, belief, valuation, judgment and every other form of experience, is merely a derivative

110. Ibid. p. 246.
Phase of feelings by virtue of contrast felt;—its content is nil, being itself only a subjective form. At the bottom of it all, experience. "The primitive form of physical experience is emotional, blind emotion—received as felt elsewhere in another occasion and conformally appropriated as a subjective passion. In the language of higher stages of experience, the primitive element is sympathy, that is, feeling 'in' another and feeling conformally 'with' another." 111

In the foregoing manner Whitehead conceives of the stuff of reality as actual entities, of which each is dipolar. Each entity or unit of fact which goes to make up the complex of reality at any instant may be observed in two ways:—genetically and morphologically. The genetic description is an account of the becoming concrescence of the actual entity and defines process; the morphological description is an account of the actual entity as having become, and defines reality in the sense of an actual thing. The morphological account of an actual entity displays the basic condition laid down on the external world in its function as a ground of transmission from one actual thing to another. This ground is extensive

111. Ibid. p. 246.
relations. 112 Extensiveness is the pervading generic form to which morphological structure of the organisms of the world conform. The organisms are of the type consisting of actual entities individuality and the type consisting of actual entities in the unity of a nexus. The primary relationship of physical occasions is extensive connection. All things exist in a general nexus, called the world, and the general extensive relationship is a condition laid upon the actual world which determines conditions to which all transmissions must conform. It is the ground of community 113 in the physical world. Through extensive connection and prehension reality takes on the dual aspect of both internal and external relations. 114 A common way of expressing extensive connections, which

113. Ibid. pp. 441, 442.
114. Ibid. pp. 470, 471. If cosmic solidarity of the physical world is to have any relevance to the description of the individual actualities composing it, it must be so by reason of the fundamental externality of the relationship in question. Contrarily, if individuality of actualities is to be recognized, there must be an aspect of these relationships from which they can be conceived as external, that is as bonds between things. The extensive scheme serves this double purpose. This also appears to be an attempt to get rid of the problem of externalism and internalism.
forms cosmic solidarity may be stated thus: all events and nexus in the universe are connected dynamically by a general overlapping, expressed by the character of prehensions, in the process of concrescence, and, they are connected logically by the process of 'contained in' or logical implications.

Process' refers to two kinds of fluency in the world, namely concrescence and transition. The former is what Locke called 'the real internal constitution of a particular existent,' the latter is analogous to Locke's 'perpetual perishing' in that it is fluency whereby the perishing of the process, on the completion of the particular existent, constitutes that existent as an original element in the constitutions of other 'particular existents elicited by repetitions of process.'

The former is inherent process and moves towards the final cause of the actual occasion in question which is its subjective aim; the latter is external and is the vehicle of the efficient cause (presentationally objectified data, the correlative universe forming the data for the actual entity in question), which is the immortal past. Thus, concrescence is the name for process whereby the many

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115. Ibid. pp. 317, 328.
116. Ibid. p. 320.
things of the universe become unified in the constitution of some one thing in the universe, and according to its subjective aim, which is the lure for intensity of feelings. The actual entity itself is only a particular instance of concrescence. Transition is that type of process which is macroscopic and efficient; concrescence is microscopic and teteological. The one is referent to actuality, the other to the real."Each actual entity, although complete so far as concerns its microscopic process, is yet incomplete by reason of its objective inclusion of the microscopic process. It really experiences a future which must be actual, although the completed actualities of that future are indetermined. In this sense, each actual occasion experiences its own objective immortality."  

'Reality' is Creativity, which is the ultimate

117. Ibid. pp. 327, 328.
118. Whitehead seems to equate reality with actual occasions and eternal objects by asserting that only eternal objects and actual entities are metaphysically real. Cf. Ibid. pp. 27, 33. The one is the ground of actuality which is in flux; the other the ground of potentiality, of universality and permanence. Again he maintains reality to be the composition of actual occasions and eternal objects, but attempts to combine actuality, flux and particularity with potentiality, permanence and universality in a unity of contrast, forming data of creative advance. It might be asked just why does he postulate both eternal objects and actual occasions to perform (Note Cont on next page)
metaphysical notions, of which God and the world are contrasted opposites in terms of which "Creativity achieves its supreme task of transforming disjoined multiplicity, with its diversities in opposition, into concomitant unity, with its diversities in contrast." \(119\) Reality is the contrast unity of the world and God, and the notion of the one devoid of the notion of the other is empty. Thus is introduced the investigation with regard to the conception of the nature and function of God in such a cosmological scheme as that which has been outlined by the system under examination.

3. Whitehead's Conception of God.

In accord with his criterion of methodology in philosophizing, Whitehead postulates a God and, gives to him certain definite functions, in the same way that he postulates his eternal objects and actual occasions. In fact, both the world and God are each in themselves actual occasions as well as even the 'most trivial puff of exis-
tence far-off in empty space. ¹ But, because the only real things are actual entities, it by no means follows that their functions are identical; they are analogous, yet each is determined by the subjective valuation of the functioning actual entity. This valuation is a mental operation and is intensification in accordance with the subjective aim.² As has been pointed out³ physical operations originate only from other actual occasions, and mental operations originate only from eternal objects. That is to say, everything that is, has a sufficient cause to be. And, "to search for a reason is to search for one or more actual entities."⁴

An actual entity in its physical operations of presentational immediacy and presentational objectification presupposes other actual entities before it; and those which it presupposes must in return presuppose others in the same way as their cause. There is an infinite regress. An actual entity in its mental operation of valuation presupposes eternal objects which are themselves independent of the valuating actual entity, and

¹ Process and Reality, pp. 27, 21.
² Categories of Obligation, 4 and 8.
³ Supra, esp. Perception and Consciousness. Cf. also Categories of Explanation.
⁴ Ibid. p. 57. The Ontological Principle.
cannot have their cause in the actual entities themselves. So it seems to be but logical suicide should Whitehead fail to postulate a God to overcome these two difficulties to which his ontological principle leads, namely, an infinite regress or something existing without a cause. The God he postulates is given the function of 'first cause' and of 'housing all eternal objects,' thus giving ground for conceptual valuation as well as the ground for physical purpose.

Creativity is the ultimate, God is its primordial, non-temporal accident. Actual entities have a threefold character: (1) a 'given' for them in the past, (2) a subjective aim in process of concrescence, and (3) a superjective: a past, a present, and a future. The primordial actual entity, namely, God, has no past. Its character is threefold: (1) His primordial nature is the unity of conceptual feelings whose data are 'all eternal objects.' This unity is directed by the subjective aim. (2) His consequent nature or physical prehension of the actualities of the revolving universe by the ingestion of eternal objects; (3) His superjective nature which itself qualifies the creative process. God is the prin-

5. Ibid. p. 11.
principle of concretion in that every initial aim from which the self-causation of each temporal concrecence starts, issues from Him, by virtue of His all embracing conceptual valuations. He is the ground of order and novelty.\(^7\) Consideration of His three characters which so describe His nature follow.

The primordial nature of God is the primordial created fact as 'the unconditional conceptual valuation of the entire multiplicity of eternal objects.'\(^8\) That is, His nature is such it has complete 'envisagement' of eternal objects\(^9\) and the general potentiality of the whole universe is in God's envisagement. Therefore nothing can ever happen that has not been envisaged in God throughout eternity. This primordial nature, being a fact deficient in actuality, renders God devoid of consciousness. For consciousness is derivative from a synthesis of the universal and the particular, the mental and the physical. And since there is only the conceptual in God's primordial nature, there can be no consciousness.\(^{10}\)

\(^{7}\) Ibid. pp. 184, 374, 377.

\(^{8}\) Ibid. p. 46ff.

\(^{9}\) Ibid. pp. 72, 73. It should be recalled that all actual occasions are merely ingressed eternal objects. So existence itself presupposes God as well as creativity. For all those aspects which go to make up any event are from God who is the only source of eternal objects.

\(^{10}\) Ibid. p. 50. Supra, Consciousness.
It follows that as to His primordial nature God's valuation is conceptual valuation of all eternal objects, and is abstracted from particulars, desires, choices and aspects of experience involving intellectual cogitations which are impure. His purpose is seeking intensity; not preservation. For there is nothing to preserve. \(^{11}\)

The consequent nature\(^{12}\) of God is the reaction of the temporal world upon Him, and results from His physical prehensions of derived actual entities. And relative to eternity of potentiality He envisages all there is under the abstract forms of eternal objects. But relative to time and actuality He feels the world and thus, has consciousness. The one experience is purely conceptual, the other is physical and concomitant hybrid prehensions.

As to the nature of God Whitehead says there is nothing in the way of proof, and he frankly admits that his cosmological scheme can but at best offer suggestions to elucidate experience. \(^{13}\) But he finds evidence to the effect that "God is not to be treated as an exception to all metaphysical principles, involved to save their col-

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11. Ibid. p. 150.
12. Ibid. pp. 15, 46.
13. Ibid. p. 521. Rather such system seems to do an injustice to experience. Infra.
lapse. He is their chief exemplification." Viewed
primordially He is the unlimited conceptual realization
of all potentiality, and is with all creation. As such
He is not eminently real as is the favorite doctrine of
traditional Christian theology. So far is He from such
eminent reality until He is deficiently actual. That is
to say His feelings are only conceptual and lack the
fullness of actuality. Such being the case, He is devoid
of consciousness. That is, as a primordial actuality, God
must not be attributed with either fullness of feeling
or consciousness the absence of physical feelings being
the cause of such deficiency His conceptual actuality
exemplifies and establishes the categorical conditions.

The conceptual feelings comprising the primordial nature
exemplify a subjective unity of subjective aim in their
subjective forms, and these subjective forms are valuations
establishing the "relative relevance of eternal objects for
each occasion of actuality. He is the lure for feeling, the
eternal urge of desire. His particular relevance to each
creative act as it arises from its own conditioned stand-
point in the world, constitutes His the initial 'object of
desire' establishing the initial phase of each subjective
aim."

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15 Ibid. p522
He is the 'mover which moves without being moved,' in which the object of desire and the object of conceptual feelings are the same. He acts upon the world as the principle of concretion whereby there is initiated definite outcome" from a situation otherwise riddled" with ambiguity. He is the ground of actualization.

Primordiality has to do with the beginning by virtue of its being "presupposed actuality of conceptual operation in unison of becoming with every other creative act." This is the ground of the principle of universal relativity, and subsequently, the description of the process of the reaction of the actual world upon God. This reaction completes God's nature into a fullness of physical feeling, derived from the objectification of the world in God. "He shares with every new creation its actual world; and the concrecent creature is objectified in God as a novel element in God's objectification of that actual world." This is God's derived nature, consequently upon the creative advance of the world', that is, His consequent nature. It follows that His behavior is true to that of an actual entity in general.

18. Ibid. p523
is dipolar; primordial and consequent. The one is conceptual and devoid of consciousness, the other is realization of the actual world in the unity of His feelings and nature by weaving His physical feelings upon His primordial concepts. His primordial nature is constituted by conceptual experience, and is limited by no actuality as a necessary presupposition, thus giving the justification of infinity, eternality, actuality and non-consciousness. The other pole of His nature is derivative from the temporal world and gives the ground for the determined, incomplete, actual and conscious. It is the ground of determination in God which is expressed by His necessary goodness.

Both God and the world have two phases of experience: conceptual and physical. The completeness of God's primordial nature issues in the perfection of His subjective aim, and the perfection of His subjective aim "issues into the character of His conceptual consequent nature." There is neither loss nor obstruction in the process, and the 'world is felt in a unison of immediacy.' The wisdom of the subjective aim prehends every actuality in all its several possibilities in such a perfected system as that of the

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20. Ibid. p.524
21. Op. Cit. This is the basic argument for the assertion that the world and God are inseparable correlatives, and permanence and flux can neither be isolated the one from the other.
temporal world, and all the experiences of such actuality are woven into the harmony of universal feeling "which is always immediate, always many, always one, always novel advance, moving onward and never perishing." 23

God's nature is best conceived as "that of a tender care that nothing is lost." This function is characteristic of His consequent nature in virtue of which He passes judgment upon and saves the world as it reacts on Him into the immediacy of His own life. This judgment is one of tenderness that nothing is lost.

The tenderness and wisdom characterizing God's consequent nature usher in His 'infinite patience.' To conceive of God as to His primordial nature and as to His consequent nature in unity over against the intermediate becoming and free existents in the physical, is to conceive of His patience, "tenderly saving the turmoil of the intermediate world by the completion of His own nature. The sheer force of things

23. Ibid. p525. This view is quite suggestive of certain Absolute Idealists such as Bradley, Bosanquet and Royce. God is made to swallow up the problem of evil. Of course it is obvious that such is merely shelving the problem.


25. Tenderness in the sense that nothing will be let go lost which can be saved; wisdom in the sense that what is mere wreckage in the temporal world is made use of, and what seems mere waste is at the same time data of creative advance into novelty.

26. Op.Cit. The universe includes a threefold creative act, viz. 1 the one infinite conceptual realization, 2 the multiple solidarity of free temporal actualizations in the world, 3 the ultimate unity of the multiplicity of actual facts with the primordial conceptual fact, the world with God.
lies in the immediate physical process; that is, the energy of physical production. God's role is not the combat of productive force with productive force, of destructive force with destructive force; it lies in the patient operation of the overpowering rationality of His conceptual harmonization. He does not create the world, He saves it; or, more accurately, He is the poet of the world, with tender patience leading it by his vision of truth, beauty and goodness. 27

The separation of 'flux' from 'permanence' leads to an entirely static God with eminent reality, "in relation to an entirely fluent world with deficient reality. Once 'static' and 'fluent' are explained as separate, characterizing diverse actualities, there can be no interplay between the thing which is static and the things which are fluent. Illusion becomes a fundamental principle. The real metaphysical problem is not merely one of permanence, requiring flux (i.e. the world) as its completion, and actuality (the world) with fluency, requiring permanence (God) as its completion.

27 Ibid. pp 25, 520. It seems that God is reduced to a merely guiding principle for the world process. In discussing concurrent actualization the function of eternal in such process leads one to think that God's hand is in the creative process. Also in saving his ontological principle Whitehead makes God the First Cause and Unmoved Mover. It appears that God is made the creator where convenient and the 'Poet' where such function is needed. He is creator and not-creator in the same system. He is a convenient agency.

28 Op. Cit. Whitehead thinks this is Plato's final problem. This also suggests the problem of traditional Deism.
The first half of the problem is relative to the completion of God's primordial nature in His consequent nature, which completion is made possible by the reaction of the temporal world on God. The second half of the problem is relative to "the completion of each fluent actual occasion by its function of objective immortality, devoid of perpetual perishing, that is, 'everlasting.'" The double problem is inseparable. Exposition of either side is in terms of the other."The consequent nature of God is the fluent world become 'everlasting' by its objective immortality in God. Also the objective immortality of actual occasions requires the primordial permanence of God, whereby the creative advance ever re-establishes itself endowed with initial subjective aim derived from the relevance of God to the evolving world." Finer religious institutions would not have objective immortality in the temporal world solve their problem. For 'everlastingness,' their very essence, would be lost.

These problems of the fluency of God and the everlastingness of passing experience are solved by the temporal world "perfected by its reception and its reformation, as a fulfilment of the primordial appetition which is the

28. Ibid. p527. Everlasting is here meant the final objectification and unification into God of all existents, i.e. the physical world. Cf. pp524, 525, 526.
30. Ibid. p527
basis of all order. In this way God is completed by the individual, fluent satisfactions of finite fact, and the temporal occasions are completed by their everlasting union with their transformed selves purged into conformation with the eternal order which is the final absolute wisdom."

31. Finally, to say God is permanent and the world is fluent is equally as true as to say the world is permanent and God is fluent. The same may be said of God as actual eminently in comparison with the world, or of the world as immanent in God; that God transcends the world, or that He creates it. In each case the reciprocal of the posite state of the one is applicable and equally true. God and the world are contrasted opposites, forming the media by which Creativity realizes and achieves its task of "transforming disjoined multiplicity, with its diversities in opposition, into concrescent unity, with its diversities in contrast."

32. Each actualization has two concrescent poles of realization, namely, enjoyment and appetite. For God appetite is prior to enjoyment; for the world enjoyment is

32. Ibid. p528. Whitehead summarizes his discourse on God by means of a group of antitheses of which each converts opposition into contrast.
prior to appettition. The world becomes actualized in virtue of God's appettitions, then God enjoys the world as it is prehended physically by Him. The contrast expresses the final metaphysical truth that both appettitive vision and physical enjoyment have an equally valid claim to priority in creation; the one characteristic primordially of God, the other characteristic primordially of the world. The physical world derives appettition from God, God derives enjoyment from the physical world; the one enjoys itself, the other completely envisages all potentialities. But just as the physical world is necessarily guided into concrescence by God, so does God require the physical world for the completion of His nature. Thus "each temporal occasion embodies God, and is embodied in God. In God's nature permanence is primordial and flux is derivative; in the world's nature flux is primordial and permanence is derivative. The world's nature is a primordial datum for God; God's nature is a primordial datum for the world. Creation achieves the reconciliation of permanence and flux when it has reached its

34. A physical pole is intrinsically exclusive, bounded by contradiction. A conceptual pole is intrinsically all-embracing and unbounded by contradiction. The share of infinity of the latter is derived from the infinity of appettition; the share of limitation of the former is derived from the exclusiveness of enjoyment. God only is the ground of appettition, and this by reason of His priority of appettition. And this can be the only primordial nature of God. By reason of the priority of enjoyment by each actual entity in the physical world, there must be "one history of many actualities in the physical world. Cf. Ibid. p528."
final term which is everlastingness, the Apotheosis of the
world." God is the infinite ground of all mentality, the
unity of vision, seeking multiplicity. The world is the
multiplicity of finite actualities seeking a perfected
unity. Neither reaches static completion. Both age in the of
creative advance into novelty, the ultimate metaphysical
ground, and in either case the one is 'the instrument of
novelty for the other.' In His primordial nature God is one,
in His consequent nature He is many; in its primordial na-
ture the world is many, in its consequent nature it is one.
"The theme of cosmology is the story of the dynamic effort
of the world passing into everlasting unity, and of the static majesty of God's vision, accompanying and accomplishing
its purpose of completion by absorption of the world's mul-
tiplicity of effort." The opposites, God and the world, are
elements in the nature of things. The concept of God is the
way in which we understand "this irreducible and incredible
fact, that which cannot be, yet is." 37

God is fully actualized only in His consequent nature. In this sense His actuality is a multiplicity of actual com-
ponents in the process of creation. "This is God in His func-
tion of the kingdom of heaven." That is, upon reception of an

35 Ibid. p529.
36 Ibid. p530.
37 Ibid. p531.
actuality in the temporal world into God's nature, it is transmuted into a 'living ever-present fact' in God's nature.

The actuality of the universe is accomplished by four creative phases: 1. phase of conceptual origination, deficient in actuality and indefinite in adjustment to valuation—i.e., God; 2. temporal phase of physical origination, containing a multiplicity of actualities, but lacking in solidarity between particulars—i.e., the physical world; 3. phase of perfected actuality, unifying individuals into one, destroying deficiency of solidarity between actual occasions, and this without loss to either of individual identity or of completeness of unity, thus originating everlastingness, or objective immortality—i.e., the consequent nature of God; 4. Phase of self-completion of creative action in which the perfected actuality passes back into, and qualifies the temporal world "so that each temporal actuality includes it as an immediate fact of relevant experience—i.e., God's consequent nature which is His completeness in wisdom and consciousness, passing back into the world modifying it in accord with love for it. The kingdom of heaven is with us today. The action of the fourth phase is the love of God.

38. Ibid. p532
for the world. What is done in the world is transformed into a reality in heaven and reality in heaven passes back into the world. By reason of this reciprocal relation the love of the world passes into the love of heaven, and floods back again into the world. "In this sense God is the great companion—the fellow sufferer who understands."

Actual occasions build up the physical world, which is essentially in transition. God is the ground antecedent to this transition, which ground includes all possibilities of physical value conceptually, under the form of eternal objects, thus holding all ideal forms of actualizations apart in equal conceptual realizations of knowledge. But He is not infinite; for to say so is to imply that He is both evil and good at the same time. Yet He is complete in the sense that His envisagement includes every possibility of value, and by such, is able to coordinate and adjust every detail. Since God is the complete conceptual realization of these as ideal forms as elements in the value of His conceptual experience, and since these ideal forms in God contribute to His complete experience, by reason of His conceptual realization of their possibilities as elements of value, in any creature, it follows that God is the one systematic, complete fact, which is the antecedent ground

conditioning every creative act. -- "He is the mirror which discloses to every creature its own greatness."

From this survey of Whitehead’s conception of God it seems quite clear that for him God is the Principle of limitation or concrescence in the Creative advance of the universe. He is the Principle whereby actuality is actuality. This Principle manifests itself in two ways, primordially and consequentially. Primordially it is the source of all eternal objects and subjective aims. And, since actual events are merely ingressed eternal objects, it follows that the way in which creativity expresses itself is determined by God. Further, this Principle of limitation exemplifies itself by qualifying actuality in that it reacts upon actuality, yielding modal existences or particular 'things'. In virtue of such activity it is the ground of both order and novelty. And, whereas Creativity is the most abstract and universal energy of Activity, God is the Principle by which and through which Creativity must express itself in the real world of process. It is to this immanent Principle that Whitehead is willing to appeal in the explanation of the occasional irrationality of brute fact in empirical experience.

42 Ibid., pp154, 155
4. General Conclusion

A. The degree in which Whitehead executed the
Purpose of the Gifford Lectureship

It might be said that Whitehead's Essay in Cosmology is in keeping with the purpose of the Gifford Lectureship from the standpoint of Natural Theology. Every source from whence knowledge of God comes is purely anti-revelational. The philosophical ideal, and subsequently his methodology are antinomous to that of Revealed Theology. On the other hand there is that characteristic which is perhaps in direct opposition to the stipulations in the Deed. That is, the little regard for experience and natural data afforded by the natural sciences as such, in the construction of his metaphysical system. In keeping with the methodology proposed by the lectureship, both Eddington and Haldane began with experience, followed out its implications according to natural laws which fall within the scope of their respective, and thus arrived at a cosmology. Contrarily, Whitehead postulates a cosmology and attempts to make all experience conform to it through functions of agencies themselves quite obscure for experience. Into this scheme every-

1. Testamentary Deed, Supra, Introduction.
3. I refer to the function ofprehension in regard to actual occasions and eternal objects; all of which only Doctor Whitehead himself seems to fully understand, and can thus follow them up throughout his system.
thing must fit. One is reminded of the Hegelian system. Some of everything is thrown into a 'hopper' and only definite well organized, yet different genera of things come out. The question is whether Whitehead doesn't do more harm than good to actual experience with his theoretical system. This is perhaps the major criticism. For defective methodology can never lead to a valid conclusion. This point will be discussed more adequately under a later topic.

In his study of God, Whitehead, unlike Eddington and Haldane, does not find Him to be the Sole Reality. Creativity is the ultimate and God is the non-temporal accident. That is, although God is not the Sole Reality, He is the only means whereby Reality can express itself. He is the World-Soul or Guide of Creativity; The Principle of Concretion. Any valid type of knowledge of Him must express itself in rational faith. For knowledge as generally meant is only an intermediate stage in the process, without metaphysical reality, and can tell us nothing of God, who is primordially real.

As to God's attributes two stand out preeminently, namely, His omniscience and His loving kindness. He is omniscient in that all possible forms are primordially apprehended by Him. That is, what is potential with man is actual with

4. Ibid. pp519, 580. Cf. esp. "For so He giveth His beloved sleep," p519
5. Ibid. p243
God. He is the Beneficent Father in that He is the principle of limitation; "the binding element in the world." And since value is determined by definiteness, God is the source of all values.

Nature as usually meant is disclosed in sense-perception as a complex of actual occasions which are bound together by a general type of relatedness which establishes the ground of the extensive continuum, and thus gives us the physical world. The relation which this world has to God is that of an inseparable aspect of creativity. God requires the world to complete his nature consequentially; the world both presupposes God as the original blue-print of its design, and requires Him as its sustaining ground. Each actual entity apprehends the whole universe God included, into a subjective unity of concrescence accordingly as it has received its subjective form and aim from God as their primary source. That is, all subjective forms and aims are originally in God. It follows that actual entities are not only from God, but have God in them. The relation between God and man is similar, for man is a nexus or group of ac-

8. Ibid. Part II, Chapter 3; cf. The concept of nature, Chapter I; especially pp. 3, 7.
tual entities in a complex unity, whose fundamental characteristic is the same as that of any composite actual entity. His relation to God is that of a microcosmos to a macrocosmos. Each person has his own greatness disclosed unto him by God, as if by a highly reflective mirror; also each person is in God and God is in each person.\textsuperscript{9}

The metaphysical foundation of morals is itself to be found in rational insight and intellectual volition. And the obligation placed upon every man, by the intrinsic nature of the universe, is self-development in view of the whole universe of which he is part and whole in virtue of the reciprocal publicity of prehension. And this man can do because of the free-will with which he is endowed in virtue of his own subjective aim, which, although derived from God, nevertheless possesses certain indeterminations awaiting its own decision.\textsuperscript{11}

The problem of Evil disappears in universal goodness. It is merely a fact which is itself only a means to greater good. In the consequent nature of God evil is transformed into useful contrast. Nothing is lost because of God's all

\begin{footnotes}
\item[9] Religion in the Making, p. 155; Process and Reality, p. 528.
\end{footnotes}
inclusive nature. Following out the implications of free will under the administration of subjective aim one arrives at the conclusion that man's duty to God is to be dictated by rational insight, the obedience to which buds forth in the concrecent wholeness of self-realization; the becoming of a richer specimen for God's own enjoyment in His consequential fullness of character and excellence.

B. Historical Significance of Whitehead's Conception of God.

As Professor T.W. Forsythe very adequately points out, Whitehead's cosmology is a new high water mark in metaphysics. To this end he even offers an original interpretation of space-time relativity. The outcome is a cosmology which is not 'bifurcated' into a world of science of mind, a world according to Newton's Scholium and a world according to Plato's Timeus. The new cosmology justifies both in a unity. And yet, as has been pointed out, there are certain definite relations between this new cosmology and each philosophical system from Descartes to

12. Ibid. pp. 341, 517, 525. Evil is a means to higher good; evil is a disharmony which eventuates in greater harmony than the degree of harmony correlative to the disharmony in question; evil is transmuted into good in the consequent nature of God. This is quite characteristic of the treatment of the problem by Absolute Idealists.

13. Supra, Historical.
Neo-Hegelianism. In fact, Whitehead makes the historical appeal to systems of thought, from Plato and Aristotle to the present, a secondary criterion for his cosmology. 14

And on the basis of such appeal he proposes a cosmology which shall serve as a general synthesis of all rationalistic philosophical systems of any import from the system of Plato to the system of Hume. 15 The function of Plato's eternal ideas. The subjectivity of form, the correlative universe as forming the data for each actuality as its material and efficient causes, the subjectivity of aim of each actuality as its final cause, the ontological principle, the nature of 'becoming' the process of ingression whereby the transcendent primordial form enters into actuality, and the primordial nature of God are all Aristotelian notions clothed in a new concept of reality, devoid of the traditional substance-quality concepts which Aristotle employed. Two fundamental Cartesian notions are

14. His primary criterion is logical coherence akin to Absolute Idealists.
15. Process and Reality, pp. v-vi, vii-ix. He justifies such motive on the ground that "any one of these writers is one-sided in the presentation of the groundwork of experience." Cf. Perception, Supra.
16. Eternal objects as the ground of all forms is analogous to Plato's Ideas as presented in the Republic, bk. vi. The process of ingression of eternal objects is akin to the role of Ideas in Plato's Timaeus,
adopted, namely, a multiplicity of actual entities and the belief that the pyramid of knowledge is based upon the immediate operation of knowing which is either essential or a contributary element in the composition of an immediate actuality. The dynamic activity of actual entities and their essential relatedness is a revised form of Leibniz's Monadology. The dynamic description in which actual entities replace mere 'modes' in a morphological description of reality is the way in which organic philosophy modifies Spinoza's Monism. The notion of objectification, the ground of perception, as well as the notion of relativity are analogous to Locke's idea of 'power' in the mind. Emphasis upon process reflects the metaphysics of Hume. The treatment of the problem of Evil is distinctly characteristic of Objective Idealism.

On the whole it appears that Whitehead's conception of God is in many respects new to occidental philosophy. Perhaps Aristotle came nearest to it. But when viewed in the light of His whole nature and function as the Principle of Concretion, Differentiation and Limitation, the nearest approach to the concept of such a God is to be found in Hindu Philosophy.
C. Critical evaluation of Whitehead’s Conception of God.

(1) Logical basis.

The logical basis of Whitehead’s point of departure is a reconciliation of extreme empiricism and extreme rationalism which express themselves in a reality of matter and mind. To do this he proposes a neutral reality from whence all forms of existence come. This neutral reality is composed of ‘events’, and specific “whatness” or predications are mere forms of these events in a nexus, which nexus is the “thatness”. Relativity is given a new interpretation and space-time is given a modal character of definitely limiting every existent as a “here” and “now”, analogous to simple location except that it carries also the idea of separativeness and prehensiveness. Time is defined in terms of the reiteration of a given pattern or form. It is an internal aspect of events. Temporalization is realization. The question suggested here is whether Whitehead doesn’t define time in terms of time. Perhaps the categories of obligation remove such difficulty. Even so, the appeal must be made to immediate experience. Again it might be asked, how can he account for time when each reiterated event in an enduring object mirrors unto itself the whole world?

That is, this being so, permanence and change become identi-
cal and to speak of change is meaningless. And since the prerequisite for time is change according to his own definition, his temporal argument fails. Furthermore, such argument suggests the reversibility of time—an incident never found in experience.

We come to Whitehead's treatment of the problem of permanence and change, Essence and Accident, Reality and Process. The significance of this problem was fully sensed by Aristotle who solved it by developing the "substance-quality" concept. Without substance or qualities, Whitehead proposes to solve it in terms of events. Permanence becomes a reiteration of pattern, and thus a relation between fleeting events. But if every event envisages the whole universe, permanence cannot be defined in terms of change. The other argument for permanence is based upon eternal objects. But here we have only possibility as permanence, and not existentiality. Again as to change; process implies both identity and change. For that which is in process must be changing on the one hand, and possessed with some degree of permanence on the other as a ground of compatibility. But actual entities are just what they are distributively, and can never change. What, then, is the ground of Process? So it seems that Whitehead is faced with either an Absolute Permanence or an Absolute Flux.
Again, Whitehead makes 'prehension' the basic characteristic of reality. Every matter of fact is both a feeler and is felt. The loose usage of 'feeling' gives to it an elastic connotation. Its most definite interpretation is where he says it is analogous to Alexander's use of the term 'enjoyment'. This seems to be a projection of human experience into all forms of existence. The same is true, in a measure, in his treatment of presentational immediacy and presentational objectification in the exposition of perception. For he makes use of the doctrine of perspectives, and to do such is to usher in conscious experience under optical laws such that each event becomes a conscious experient. In this sense he is akin to certain personal idealists.

A most salient feature of Whitehead's cosmology is the problem of relations. Granted that he solved the problem of discrete atomicity, which Hume so clearly pointed, and thus laid a new foundation for epistemology, other problems suggest themselves. This he did through prehension. Enjoyment in this sense is meant life enjoying itself in virtue of immediate awareness of self-knowledge. Cf. Religion in The Making, p. 114.


18. The problem of internalism and externalism; the principle of immanent wholeness or internal relations expresses itself in the subjective unity and concrescence of each event, the principle of atomic specificity or externality of relations. The principle of externalism or atomic specificity is overcome through universal relativity ofprehensions.
sions. But his epistemology has implications more significant. If each actual entityprehends the whole universe, how can particulars be known? Whitehead argues that all eternal objects are internally related in God, and that they are all envisaged with varying degrees of relevance by each actual occasion through the ingression of an eternal object (any one eternal object) into said occasion. An event is defined as ingressed eternal objects only. Thus knowledge is impossible unless it be omniscience. So he must call in God as a brute fact whose function is to establish external relations and make knowledge of particulars possible. Going a bit further, if eternal objects form the source of the mental and God's primordial prehensions are purely mental, it follows that every event is itself a unit of the mental in that events are merely ingressed eternal objects. So, both the internality of relations and the stuff of events suggest a Idealism much akin to that of Bishop Berkeley. And, whereas Berkeley needed a God to give unity to his system of spirits, Whitehead needed a God to give diversity to his system of events; the one was too atomistic, the other too organic. But both explain the physical as a function of the mental.
Finally, Whitehead proposes a cosmology which he claims will elucidate experience. But examination of his position suggests many difficulties. The layman needs no eternal objects and actual occasions to explain his experience. It is true that Whitehead's logical criterion is coherence. But it appears that his methodology is in contradiction with his criterion. I refer to his doctrine of extensive abstraction by which he gives meaning to events. Granted that he is a first rate mathematician, and as a mathematician he may advocate and even develop an 'abstractive set', we may ask if he can fill in this abstractive set with concrete experience. Now Whitehead proposes to be empirical. But to reconcile the doctrine of extensive abstraction at the basis of his metaphysics with the doctrine of Empiricism seems to be a problem equal to that of Process and Reality.

(2). The conception of God Examined.

The very apparently irrational and fleeting nature of experience, according to Whitehead, leads to a search for a system of orderliness behind the shifting scene of events. This divine element unites actuality with potentiality, things with ideas, events with eternal objects. It is the principle of creativity and each actual creation is a
unification of eternal objects primordial in God's nature. Thus it appears that God is Creator in virtue of His primordial nature, although the argument for Creativity as the universal of universals and as distinct from God is upheld. But why attempt to account for the brute irrationality of experience? It seems that God means even more in Whitehead's system. For God saves the Ontological principle and his eternal objects, as well as accounts for discrete atomicity.

Another difficulty is suggested by God's attributes. He is Creator, Sustainer, Omniscient, Patient, Beneficent Father and source of value. But he is finite as is each event. He is actual and determinate. These postulates do not square with some others which appear in this same system. For example, it is the duty of God to solve the 19 One-many and the Permanence-flux problem. This results in a God as the Absolute, analogous to absolute idealism, as opposed to God as finite. All flux becomes mere ap-

19. To solve this problem, he postulates God as primordially one in which the possibilities of every actual occasion become envisaged and encamped. These possibilities become actualities in the creative advance. Their actualizations are manifold. God prehends this manifold unto Himself in a synthetic unity, forming his consequent nature. Thus God is primordially one and consequentially many, while the world is initially many and later one in God. God is the ground of permanence in virtue of eternal objects. The world is the ground of flux in virtue of actual occasions. But, if everything is at each instant from God, in God and back to God, is there really a One-many problem? Is there really any flux to talk about?
pearance, so it appears that two alternatives present them- 

selves; an absolute God which reduces process to mere ap-
pearance, or a finite transcendent God in opposition to 
a world in real flux, akin to Deism. The former alterna-
tive destroys the reality of actual occasions, the latter 
destroy the reality of eternal objects. In view of his 
strong emphasis upon immanence it would be more consis-
tent to accept the former alternative.
CHAPTER IV.

GOD AS THE HUMAN IDEAL.

1. Biography And Introductory.

John Dewey, eminent American Philosopher and Educator, was born in Burlington, Vermont, October 20, 1859. He received his formal education at the University of Vermont and at the John Hopkins University, having the degree of Bachelor of Arts conferred upon him by the former, 1879, and the degree of Doctor of Philosophy conferred upon him by the latter, 1884. He was Professor of Philosophy at the University of Minnesota, 1882-1889, and held a similar post at the University of Michigan, 1889-1894. He became Professor of Philosophy, and subsequently Director of the school of Education, at the University of Chicago, 1894, where he remained until he went to join the Department of Philosophy at Columbia University, 1904, an affiliation he still holds as Professor Emeritus. For two years he was lecturer in education and philosophy in the University of Peking, China, and, was once chosen by the Turkish Government to draw up a report on the reorganization of its national schools. He is at present Correspondent De L'Institut de France and President of the
"People's Lobby," - the latter being an organization which is liberal in its political views and moderately socialistic in its economic views, and whose main objective is to enhance social and political freedom.

There is hardly another American philosopher whose influence has been so great as that of Dewey. This is perhaps due to his keen interest in Education and Social Philosophy, and his determination that there might be practical applications, far the cause of which he has increasingly devoted himself for the past thirty years. He was brought up under the influence of Objective Idealism, which, beginning with Schelling and the Romanticists, taken over by such writers as Wordsworth, Carlyle, Coleridge and Emerson, and finding forceful expression of itself in the compiled works of Coleridge which was edited at the University of Maine, had spread throughout New England. Doctor Marsh, president of the University of Vermont and Dewey's teacher, was himself among those influenced by the

1. Cf. Psychology, pp. 234-235, especially cf. p. 244. Here Dewey reiterates the philosophy of Schelling that the Ideal and the real are one; that subject and object, God and nature, each and all form a unity. This is Dewey's first book; it reflects his early inclinations. It is written in a thoroughly objective Idealistic strain, analogous to the works of T.H. Green. Also cf. Mind, 1886 Vol. II, pp. 1-19; pp. 153-185. These are Dewey's first writing and reflect a functional idealism.
movement. But while at the University of Michigan Dewey became interested in Biological Science. When he became affiliated with the University of Chicago he began to show a great interest in Education, subsequently becoming Director of the School of Education. It was in this capacity that his fame became national through his initiation of an "experimental school" to carry out his educational ideas and to formulate his democratic principles. His interest in Social and Political Philosophy became acute after going to Columbia University. With the awakening of such interest he began to gain prominence as a Lecturer, some of his most important lectures being the McNair Lectures* at the University of North Carolina, 1915, the Paul Carus Lectures,** 1925, the Lerwill Lectures at Keyon College, 1926, the Ingalls Lectures* at Harvard University, 1931, and the Gifford Lectures* at the University of Edinburgh, 1929.

To say that his unique contribution is to be found in the field of social and educational philosophy is to state a truism. His interest as a philosopher centers upon

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2. *German Philosophy and Politics.*
knowledge and the knowing process. "All that is vital in his ethical, social, and educational theories depends ultimately upon the special interpretation of the function of knowledge which constitutes his chief claim to philosophical distinction." 7 This functional characteristic is at the basis of all his works, and it is the keynote of his Gifford Lectures, *The Quest For Certainty*, an examination of which is now proposed. Considered in this light these lectures represent the fullest expression of his philosophical system.

The gradual transition from metaphysical interests to purely social interests is a product of Dewey's psychological emphasis. 8 The starting point in his subsequent system of thought is analogous to a biological functionalism. His sole interest in philosophizing is in man, which he sees as an organism in an environment, remaking it as well as being made by it. This organism must not adapt itself to its environment as Spencer would have it do, but must control it through the functional activity of knowledge (i.e., intelligence). Such ideas are reflected, more

or less, in all his principal works and essays, among which some of his most important publications are as follows: - Psychology, 1887; Leibniz's New Essays on Human Understanding, 1888; Outlines of a Critical Theory of Ethics, 1891; Study of Ethics, 1894; Psychology, in joint authorship with James A. McLellan, 1895; Interest as Related to Will, 1896; My Pedagogic Creed, 1897; Significance of the Problem of Knowledge, 1897; The Education Situation, 1903; Logical Conditions of a Scientific Treatment of Morality, 1903; Relation of Theory to Practice in the Education of Teachers, 1904; Child and Curriculum, 1906; The School Child, 1907; Ethics, joint authorship with James H. Turfts, 1908; Studies in Logical Theory, 1909; The Ethical Principles Underlying Education, 1909; Moral Principles of Education, 1909; How We Think, 1910; Interest and Effort in Education, 1917; School and Society, 1915; Democracy and Education, 1916; Experimental Logic, 1916; Creative Intelligence, 1917; Human Nature and Conduct, 1922; Experience and Nature, 1925; The Public and Its Problems, 1927; Individualism, Old and New, 1930; The Way Out of Educational Confusion, 1931, and various other essays and articles. 9

9. The total aggregate of Dewey's articles, essays, addresses and books which are in print is five hundred and twenty four according to report. Cf. The Bibliography of John Dewey, by Rhomes and Schneider. Columbia University Press, 1929.
2. The Development of Dewey's Philosophical Position.

Just as physical and astronomical concepts dominate the thought of Eddington, physiological and biological concepts dominate the thought of Haldane, and mathematical concepts dominate the thought of Whitehead, so it might be said that biologico-social concepts dominate the thought of Dewey. This is illustrated in the titles of many of his works. That one might adequately appreciate Dewey's philosophical system a brief examination of the history of his philosophical ideas may prove helpful. His first article relevant to the point in question appeared in January, 1886, which was soon followed by a second article, April, 1886.

It is in these articles he proposes a descriptive methodology for philosophy analogous to that of the natural sciences, and this he finds in psychology, which, for him, is the realization of the universe in and through the individual, and, which is the instrument for determining the nature of every thing, subject and object, particular and universal, as it is found in consciousness. Here he also

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1. The writer is indebted to the thesis of D.T. Howard, entitled John Dewey's Logical Theory for the chronological reference, but has checked upon the various references and articles himself, using the thesis only as a guide in locating said references.


accepts a thoroughgoing idealism. In a subsequent work, which appeared, July, 1887, Dewey carries his idealistic standpoint a bit further and makes intelligence an ideal a priori, implicit in reality and as constituting and giving meaning to experience a posteriori. Understanding is an integral part of reality's process rather than a process apart from reality as Kant proposed; it is in experience as a special activity which builds up the meaning of experience. His idealistic attitude was furthered by the influence of Hegelianism which came to him through the work of Professor Andrew Seth. This is made evident in his subsequent work which appeared in January, 1890. Here he argues for the self as a synthetic activity in experience. Gradually he gets away from the formal and subjectivist logic, and accepts the transcendental logic, characteristic of Hegelianism. This is made evident in his Article on "Present Position of Logical Theory." In this work his whole purpose is to justify the logic of Hegel that logic and metaphysics are one and the same, to unite thought

5. Hegelianism and Personality.
7. It might be of interest to note that Dewey earned his degree of Doctor of Philosophy with the subject "The Psychology of Kant." for his Dissertation.
and fact. And this he does by making thinking only a fact in its process of translation from brute sense impression to clear meaning. Thought and thing are united. Dewey defends Hegel as the true exponent of the scientific spirit on this score. Dewey's sole purpose was to find a philosophical system which would justify his 'Psychological Method' in philosophizing. This he thought he had found in Hegelianism. But it was soon discovered that the strictly philosophical and rational methodology of Hegelianism, was incompatible with any such purely psychological and descriptive methodology. So one finds Dewey gradually deserting Hegelianism in the same manner and for the same reason that he deserted his revised Kantianism. This fact is evident in an article by Dewey which appeared two years after his work in strong defense of Hegelianism. In this work one finds Dewey arriving at a complete formulation of his "Psychological Methodology."

The organic whole is the first in the order of reality, but last in the order of knowledge. In experience one begins with fragments which he for sake of economy takes

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9. "The Superstition of Necessity." Monist, Volume III, pp. 362-373, 1893. Dewey indicates that this article was suggested to him by Mr. Peirce's article, "The Doctrine of Necessity Examined." Cf. Monist, Vol II, pp. 321-337. 1892. As Howard points out there is very little in common respecting these two articles and the influence must have been one of contrast.
for wholes. Only by piecing together these fragments, and by their transformation, involved in such combination, does one arrive at the real fact. In the process there comes a stage when one recognizes a unity beginning to dawn upon him, while the apparently distinct wholes (i.e. fragments) continue to persist. These two contradictory conceptions are united by judgment; and it does so "by the theory that the dawning unity is an effect necessarily produced by the interaction of the former wholes."¹⁰ The stage of unity which gradually dawns upon one reveals to him that there is but 'one reality' which he has been perceiving and apprehending in various fragments which he had mistaken for wholes. So he learns in the end that instead of having discovered and connected together several distinctly separate realities, he has "been engaged in the progressive definition of one fact."¹¹ Reality has an implicit ideality, and knowledge of it is the progressive development of this implicit ideality through a synthetic thought-process, thought itself being only an organic function for economy of action. And knowledge only arises when this process of idealization occurs upon the occasion

¹¹. Op. Cit. Here Dewey asserts that reality is a fact, an organic wholeness, the ground of all experience.
of particular crises and situation. Faced with such problems there comes a stage, in virtue of synthetic idealization, in which unity begins to dawn and meaning emerges, presenting alternatives. Necessity is the impetus behind the transition to greater realization of the total meaning of the world, and practical necessity occasions the process of transforming experience into knowledge. In this wise does Dewey introduce his psychological method of philosophy by giving a psychological description of the process whereby self-consciousness 'specifies itself' into parts which are related to the whole (universal self-consciousness). Also, he introduces his functional theory of knowledge in which the function of knowledge is to restore and to call forth unity in experience. This is the cardinal point and seed of his Functional Instrumentalism, and it is a natural outgrowth of his psychological standpoint which he developed in his initial philosophical career. This functional epistemology permeates Dewey's first serious undertaking in the field of Ethics in an article 12 which appeared two years earlier than "The Superstition of Necessity." Here he asserts moral theory to be a proposed act in idea, and thus he proposes to con-

next theory and practice into a unity. The outlay and
content of this essay is a bitter attack upon a meta-
physics as separate and distinct from actual empirical
experience.

A third important phase in Dewey's philosophical
career is marked by his Functional Psychology. He had
abandoned the idealistic standpoint for Instrumental
Pragmatism. But he had retained one idea which he had al-
ways entertained, namely, the idea of the synthetic activi-
ty whereby self-consciousness evolves ideality of the
world as an operation through the human organism. He had
often said, referring to Green, that Eternal Self-Conscious-
ness reproduces itself in man. But how? Dewey desired a
smooth description of such process. His ethical theory
had brought the body world relationship into the fore-
ground, and the idea of the relation of theory and prac-
tice emphasized thought and body connection; so that thought
is connected to the world through the medium of body. So
Dewey finds a biological interpretation most attractive.

13. This new psychology was published in a series of
articles contributed to the Psychological Review and the
Philosophical Review between the years 1894-1896. The most
important of these articles is "The Reflex Arc Concept in
Psychology," Psychological Review, Volume III, pp. 357-
379, 1896.

14. As to why Dewey accepted such interpretation,
extpecting that it proved convenient, is largely a matter of
speculation. He has always been active in many fields, and,
perhaps biological science proved most conducive for his
description of psychic phenomena through analogy.
And he accepts a biological description of the way in which self-consciousness evolves ideally, namely, organism-in-relation-to-environment. Thought becomes a function of the organism in relation and is only a fact in experience. This statement becomes the key to his theory of knowledge, and expresses the ground of his Functional or Biological Psychology.

'A fourth phase in Dewey's career is marked by his acceptance of the 'Evolutionary standpoint.' This phase is expressed in his Ethical work, which appeared in 1898. The occasion of the essay is a criticism of Huxley's essay on Evolution and Ethics. Dewey goes so far as to make evolution applicable to modes of action. Thought process is made a mode of adjustment or adaptation, involving inference, that is, an instrument of adaptation. The organ of reflection is a product of evolutionary forces, which describes a process of selection constantly occurring in the individual organism. With increased industrialization and civilization the human environment is becoming more complex. Knowledge of right acts is imperative, and for two reasons: to economize action and to avoid peril. The human mind is a highly developed organ.

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whose function it is to make adaptation easier and response more variable. The business of the mind is here and now practical, and it can tell us nothing of the nature of reality as such. And its practicability is in its generation of useful habits. This whole view is worked out on the basis of an evolutionary metaphysics. Man is an organism whose environment is the changing flux of reality as experienced. He is stimulated into action by his needs and his wants. In such circumstance he adapts himself to conditions, he makes situations over he meets situations habitually where he can, but he always suffers the consequences of these crises in case he cannot make the necessary adjustment.

To sum up what has been said, Dewey began his philosophical career with an attempt to give to philosophy as a method of science. This is expressed in his earliest works on psychology as philosophical method. In quest for a system to support his view he became an exponent of Hegelianism. Finding such idealism did not suit his purpose to justify psychology as a method, he developed his Functional Instrumentalism which gave to self-consciousness that act of specifying itself into parts which are related to the universal self-consciousness, and which gives to knowledge the function of unifying experience. Carrying
such epistemology over into experience he sets up a new basis of morals. He proposed the unity of act and idea, made all acts and ideas particularistic, and destroyed the notion of values-in-general. To unify the 'knowing' and the 'known' he constructed a Functional Psychology of Organism-in-relation-to-environment in which thought is a function of the thinking organism, and is only a fact of experience. To further elucidate his system Dewey proposed an evolutionary metaphysics of a reality in process in which the organism is found. Evolution applies even to modes of action. Thought is a mode of action facilitating adaptation in the evolving process; reflection is a mode of action describing the process of selection constantly going on in the individual organism. The mind is only a highly developed organ whose function is to make adaptation easier and response more variable.

The point of view stated above expresses Dewey's philosophy in its mature form, as well as the influences which led to its formulation. Two fundamental principles are involved. The one is the self or organism in relation to its environment, the other is the supreme value placed upon the function of knowledge. The function of the latter determines the nature of the relationship expressed in the former. Such notions form the
basic starting point of every subsequent work by Dewey, be it in the field of Metaphysics, of Social and Moral Philosophy, of Psychology or Education.

The point for consideration in the present undertaking is Dewey's philosophical position as it is presented in his Gifford Lectures, of which the theme is "A study of the relation between knowledge and action". Here he not only indicates the significance of knowledge in his philosophy, but even reiterates the transcendental logic which he accepted in 1890, by proposing a unity of knowledge and action. The title of these lectures suggests a problem. The problem is one of permanence in a changing world as is suggested by the evolutionary metaphysics he accepted as early as 1898. The world is in flux, and in this flux of things man is faced with perils and hazards. It is his primary aim to avoid peril, and to do this requires a forecasting of action as potent in idea. This becomes a practical necessity that

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18. Evolution and Ethics. Monist, Vol. VII, pp. 321-341. Dewey applies evolution to all modes of action, and develops an evolutionary metaphysics in which man is an organism whose environment is the flux of things. He is stimulated into action by his wants and needs. The function of thinking is to facilitate towards this end.
any fact in experience might be envisaged in its whole-
ness of relationship. Here Dewey reiterates his Doctrine
of Necessity set forth in 1893, where he argues that
necessity is the impetus of the transition to greater
realization of the total meaning of the world.

In his quest for the permanent Dewey argues that
the history of civilization shows that man has achieved
his goal in two ways, namely, by willingly allying him-
self with whatever his destiny may be and accepting his
lot as it comes to him, and by modifying the flux in
which he finds himself and thus converting would-be per-
ils to account. The latter is the method of changing the
world through action, the former is changing the self in
emotion and idea. Out of these two ways of arriving at
certainty and security has emerged the sharp distinction
between theory and practice. Primitive men held inner
attitude in esteem and overt action in disrespect. The
former was associated with the Gods. Philosophy came a-
long and crystallized this primitive notion. Philoso-
phers"glorified their own office without doubt in plac-
ing theory above practice." Intellectual activity was

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19. The Superstition Of Necessity
20. QC. pp 3, 4. Dewey says the method of changing the
self in emotion and idea is characteristic of primitive
men, while that of action involves intelligence. His Func-
tional psychology and evolutionary metaphysics reflect
themselves at this point. The question suggested is whether
a self can change the world, or just change its rela-
tions to things in various ways. The latter view seems more
plausible. This would mean that, after all, we do not change
the world.
associated with leisure, practical activity with the unpleasant, carrying the idea of slavery and serfdom. Knowing and thinking were associated with the spiritual, while practical activity was associated with the material. In this manner, Dewey argues, the historical basis of the duality of knowledge and action has been laid in the quest for a certainty absolutely unshakeable. Experience teaches that the distinctive characteristic of practical activity is the uncertainty which attends it; of it we must say, act, but act at your peril. For the particularistic nature of practical action makes duplication impossible, and thus eliminates the basis of complete assurance. On the other hand, traditional philosophy would have the intellect grasp universal Being; "Being which is fixed, universal and immutable" in which is found a permanence above and beyond man in which he can attain to self-transcendence. Thought becomes complete in itself and certainty is achieved. The adage is "the quest for complete certainty can be fulfilled in knowing alone."

But Dewey hastens to point out that such adage is a product of primitive civilization, when man was with-

22. The Quest for Certainty, p5.
23.Ibid.p6.
25.Ibid.p8.
26.Ibid.pp4, 11, 13
out tools and instruments of control. No accurate foresight existed and the forces of nature were blindly faced. Mystery attended experiences of good and evil; incidents appeared to come from a cause beyond man's control. This is especially true and noteworthy in crises such as birth, puberty, famine, war, illness and death. Man grasped at whatever promised aid in developing a philosophy of life. Superstition and magical beliefs enshrouded these inexplicable phenomena. Ceremonies became associated with incidents and objects of the 'good' and the 'evil'. Such objects were regarded with reverence. Incidents regarded as neither holy nor common became associated with the term 'fortunate'. As the 'fortunate' became more frequent through trial and error learning it became the 'lucky'. The holy and the fortunate became the holy and the lucky, the lucky being associated with tangible and partially explicable incidents. Accordingly, man developed a degree of mastery over the lucky, while his reverence for the holy persisted. Gradually, beliefs about the lucky became matter-of-fact, and the lucky became the 'ordinary' while the holy became associated with the imaginative or emotional ideas. The one

27. Does Dewey not leave ground for the same critic in him that he grasps his metaphysics out of the 'nowhere' and proceeds to justify his position?
became physical and inferior, the other mental and superior. The superior was associated with the uncontrollable and regarded as supernatural. This represented the religious state of culture which philosophers have crystallized by rationalization. They have substituted 'knowing' for 'imagination'. Logical canons replaced allegories and Euclidean Geometry translated what was sound in opinion into rational discourse which appeared to disclose a world of ideal forms necessarily connected. This was generalized into the doctrine of 'Being' which Aristotle made the object of philosophy. This Being is eternal and self-sufficient because its intrinsic nature is the "good". Thus, Dewey says, the Philosophy of Plato and Aristotle, considered as cultural subject matter, were systematizations in rational form of the content in Greek religious and artistic beliefs.

The effect of this whole movement is the idea of a higher realm of fixed reality which is antecedently real. To think is to transcend the world of flux; to act is to sink back into it. Out of this notion has emerged the idea that the office of knowledge is to uncover the antecedently real. Corresponding to these two realms are the practical and the theoretical in epistemology, the physical

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28. QC. p16
and spiritual in metaphysics and body and mind in psychology, all of which are products of primitive imagination. But there is no way of changing the world through action in such a way as to achieve certainty. For the ultimately real cannot be influenced by the inferior realm of the physical. Thus we have the universalized idea of an appeal to the spiritual as the 'final court'.

This, in brief, is the way Dewey presents his thesis that the relation between knowledge and action as separate and distinct is historically grounded, although false in principle. The whole doctrine is a product of primitive imagination which had to take the place of tools and instruments of control so bountiful in present day civilization. And in view of our instruments of control on the one hand, and the fact that neither primitive imagination nor Greek rationalization on the other hand told the whole story, Dewey argues that we should no longer expect progress on such primitive assumptions, but get down to some principle which will make possible the unification of knowledge and action. We must get something that will serve as a means to an end.

Such description of the problem in question is not beyond reproof. First, a citation of evidence in favor of

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30. Ibid. p36ff. Note Evolutionary Metaphysics.
such argument is lacking. It might be well said that Doctor Dewey fails to give a single instance of evidence to substantiate his contention. Instead, there is reiteration—perhaps for emphasis. Secondly, Doctor Dewey reflects a peculiar bias. Somewhat skilfully, he closely associates traditional philosophy with magic and primitive superstition, while he closely associates his own philosophy with the methodology of modern physical science. The one is described only in terms of backwardness; the other in terms of intelligence. This strikes one as an appeal to prejudice, rather than a satisfactory argument.

Dewey finds the fundamental difficulty of philosophical inquiry to center around problems of axiology. Values, like genuine knowledge, have been placed in the realm of the Ultimate and antecedently real Being, which is supreme and independent of man in whose life values are to be transiently experienced. This realm has been called God, the Absolute valuer and ground of permanence which can satisfy all our quests. It follows that

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37. Ibid. pp 15, 26, 35, 39, 44, 46. Dewey argues that from observation of values as transient in experience man postulated their permanence in an absolute valuer who is the "Unmoved Mover". This was done to give permanence to values. He gave to them a-priori being, independent of experience of them. This abode of values was universal permanence itself. Thus, values were achieved only through reason and the relation between axiology and epistemology was one of partial identity.
the appeal is to God in matters of conduct, since all values inhere in Him. It also follows that true values can be achieved only through reason, since only reason can put one in harmony with God. Axiology is equated with Truth, which is itself rational demonstration of antecedent Being. And again knowledge is elevated at the cost of action.

Mathematics finally developed application of the demonstrative scheme of knowledge to 'natural' objects. This tended to break down the absolute authority of traditional epistemology. For if demonstrative knowledge be the ground of value, then physical science could boast of an equally valid axiology. The result was a conflict between philosophy and science. The new trend was a disposition to break away from the tradition according to which the real status of values was to be determined by knowledge. This created a new problem for philosophy. It had to reconcile the findings of the new science with the validity of traditional axiology. To accept the facts of the new science in full would mean acceptance of action in knowing; to retain traditional axiology would mean the

32. Ibid. p28ff. Dewey thinks such development was completely exemplified in the scientific revolution of the seventeenth century. The clash was not due to the indiscreteness of the new science, but to traditional epistemology.
elimination of action. Faced with such difficulty, Dewey says, modern philosophy attempted to overcome its problem by increasing it. The notions of 'intrinsic' and 'instrumental' values were developed, of which the latter was used with reference to the values of science. Again one finds the separation between the rationally perfect realm and the natural world. This is a product of the influence which Hebraic and Christian religion had upon the framework of Greek ideas about nature and the nature of knowledge which modern philosophy inherited through the medium of Hebraic and Christian influence. The natural world was fallen and corrupt; the antecedent Being was supreme and perfect, the source of righteousness, the ultimate moral perfection, the ground of moral law and human conduct, the final ground of the "Good". Henceforth the Ethical became more fundamental than the rational. The more a significant issue concerned the relation of will to the Supreme Being. But, as was true of Greek philosophy, the defining characteristic of the ultimately real was the "good". Beginning here, modern philosophy marked its career initially "with an accentuation of the gap which exists between ultimate and eternal values and natural objects and goods." Science stood for the latter, philosophy for

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33 Ibid. pp 50, 53.
34 Ibid. p 53
the former. Nature and spirit were put in opposition, and yet were necessarily connected. Philosophy faced a dilemma. It could not be frankly naturalistic in virtue of traditional metaphysics; it could not be fully spiritualistic in virtue of the conclusions of natural science. On the one hand man was a part of nature on the other a member of the realm of spirit. The problem became the justification of both science and philosophy and the double nature of man became the focus of the attack. The result was the mind-body, spirit-matter problem. This problem marks the interest of philosophical systems from Spinoza to contemporary realists. And yet, each system has failed to solve the problem. And the common cause Dewey finds in the acceptance of an ultimate antecedently real Being who is the source of all judgments of values as the object of knowledge; that this Being is "antecedent to reflective inquiry and independent of it.

35. Ibid. pp. 53, 68. DeGraet raised the problem. Spinoza solved it by absolute monism. Kant solved it by dualism of phenomena and noumena. Post-Kantian idealists, Hegel, Fichte, solved it by unifying and integrating what Kant separated. Spencer solved it by cosmic evolution. Contemporary realism solves it by method of isolation, in which it begins with the objects of knowing divides them into existential and non-existential in which the former is the data of the sense and the latter in which the reason, the one the ground of science, the other the ground of essences. The primary purpose of each of these conflicting authorities is an effort to solve the problem of values whose actualization presupposes an antecedent reality.
and has among its defining characteristics those properties which alone have authority over the formation of judgments of value ... intellectual, social, moral, religious, esthetic." These premises accepted the sole office of philosophy is the "cognition of this Being and its essential properties." 36 Thus philosophy finds itself in a precarious position; for there is a failure due to empty standards derived from true Being in the formation of judgments in fields of concrete experience, and there is an intellectual confusion wrought by its own conflicting authorities. 37

To sum up Dewey's attitude on this point, I quote "The thought that the values which are unstable and wavering in the world in which we live are eternally secure in a higher realm which reason demonstrates but which we cannot experience, that all goods which are defeated here are triumphant there, may give consolation to the depressed. But it does not change the existential situation in the least. The separation that has been instituted between theory and practice, with its consequent substitutions of cognitive quest for absolute assurance for practical endeavour to make the existence of goods more secure in

36. Ibid. p. 69.
37. Ibid. pp. 70, 71, 77.
experience, has had the effect of distracting attention and diverting energy from a task whose performance would yield definite results. The chief consideration in achieving concrete security of values lies in the perfection of methods of action. More activity blindly striving, gets nothing forward. The notion that thought, apart from action, can warrant complete certitude as to the status of supreme good, makes no contribution to the central problem of the development of intelligent methods of regulation. It rather deadens and depresses activity in that direction.³⁸ Again he says "All these notions about certainty and the fixed, about the nature of the real world, about the nature of mind and its organs of knowing, are completely bound up with one another, and their consequences ramify into practically all important ideas entertained upon any philosophic question. They all flow. Such is my (question) thesis from the separation (set up in interest of absolute certainty) between theory and practice, knowledge and action. Consequently the latter problem cannot be attacked in isolation by itself."³⁹ And we come back to the fact that the genuine issue is not whether

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³⁸. Ibid. pp. 35, 36.
certain values associated with traditions and institutions have being already (whether that of existence or of essence) but what concrete judgments we are to form about ends and means in the regulation of practical behavior."\textsuperscript{40}

Dewey's attitude towards traditional philosophy may be clearly stated at this point. For him all philosophy has based its procedure upon an error, and be it metaphysics, ontology, traditional logic or axiology this error is common to each. The root of this common error is in a pseudo-epistemology which makes genuine knowledge a cognition of something antecedently real. Moreover, he argues that this same error is the source of a dualism of mind and body, spiritual and material, God and the world. The characteristic of one is reason, of the other is action. The former characteristic achieves theoretical certainty, the latter, only probability. Tradition has identified values with theoretical certitude, thus making God the ultimate source of all values while human reason and will are means of communion with this ultimately real Absolute Valuer. Dewey opposes such cosmology and argues that such "fallacious arguments" vanish with the appearance of a sound epistemology.

\textsuperscript{40} Ibid. p. 46.
But Dewey makes himself an object of possible criticism in the general historical development of his thesis. In the first place there is a loose usage of terms. In this transient life man seeks security in two ways; in changing his inner attitude. Dewey immediately equates inner attitude with theory, and subsequently identifies it with knowledge. This seems beside the point. For an inner attitude may be only an emotional state, whereas the origin of a theory requires more extensive psychic operations. The transition from theory to knowledge offers little difficulty, but Dewey's problem seems to be one of getting away from mere inner attitude to pure theory. So far as the exposition in question is concerned his work on this point is a failure.

Again Dewey introduces his argument with the conspicuous use of the term 'security' which he very hurriedly equates with certainty and permanence. Conversely, uncertainty is equated with insecurity. The point at issue is one as to whether such shifting of terms is justified when Dewey himself offers nothing in their defense by way of evidence or argument. Such minor points serve to indicate the general trend of his thought which is an interest in ends and goods, and in the process presupposed by their realization only so far as such process results in them.
Having discovered the source of difficulty, Dewey proposes a solution for the problem of modern metaphysics. This is to be done by a new epistemology. For the nature of knowledge has always been the foundation and the point of departure in every philosophical system, and each system has separated knowing from doing. But philosophy must concern itself more with the world in which we live; that of our actual experience. To do this it must have a new method, namely, that of contemporary physical science. I quote: "The groundwork of fact that is selected for special examination and description in the hypothesis which is to be set forth is the procedure of present scientific inquiry, in those matters which are most fully subject to intellectual control, namely, the physical sciences." Reasons in behalf of such method are as follows: the state of inquiry is an observable fact, the data known are relevant to our increasing industrialization, and most of all this procedure unites the age-long rivals of knowing and doing. That is the secret of the success of modern science, he avers, in its rescue of humanity from

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41. Ibid. pp. 78, 79.
42. Ibid. p. 77.
43. Ibid. p. 78.
44. Ibid. pp. 78, 79. Method of physical science selected for practical reasons, namely, industrialization.
many of its would-be perils. That is, knowledge arrived at by scientific method is our most dependable knowledge. And yet one is forced to employ both knowing and action as a method of realizing such dependable knowledge. This being the case, Dewey argues that the salient premise of classical philosophy is destroyed. Knowledge becomes the correlation between changes, wrought through deliberate institution of a definite and specific course of change, when measured by a series of operations. That is, knowledge is arrived at through the method of the physical sciences. This transformation of the method of knowing originated from the scientific revolution begun in the sixteenth and seventeenth centuries.

At this point Dewey attempts to differentiate between the 'Empirical and the Experimental.' Closely related to these are the inherent defects of perception in classical philosophy and practical defects of the

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46. Ibid. p. 84. Cf. Bridgman's Logic of Modern Physics.
47. Ibid. p. 25.
48. Ibid. p. 31. Dewey argues that empirical experience is that found out of undirected activity and yields knowledge analogous to that arrived at through "trial and error" method; experimental experience is that framed out of directed activity.
senses in modern science. The former conceives of the real knowledge as of the permanent only, the latter, as of and through the correlation of change. From this point onward Dewey makes use of the "Experimental Experience". This type of inquiry has three traits. It is directed activity, "and such that the consequences of directed operations form the objects that have the property of being known." "Data" are substituted for "objects"; subject matter for further interpretation, for finalities; problems for certainties. Nature as it already exists ceases to be something which must be accepted and submitted to, endured or enjoyed just as it is. It is something to be modified and intentionally controlled; material for action, to be acted upon so as to be transformed into new objects which better answer our needs. Nature as it exists at any particular moment is a challenge rather than a completion; "it provides certain starting points rather than final ends.--- In short there is a change from knowing as an esthetic enjoyment of the properties of nature regarded as a work of divine art, to knowing

49. Ibid. p86. It involves overt action; is directed by ideas; eventuates in the construction of a new empirical situation which changes the relation of the organism to its environment.
50. Ibid. p87.
51. Ibid. pp94, 100. Permanence is replaced by flux.
as a means of secular control that is a method of purposely introducing changes which will alter the direction of the course of events."

But it may be asked of Dewey just how can one account for natural calamities. Granted that nature is in a certain measure controllable by intelligence. Does it follow that the data of the physical sciences warrant the conclusion that intelligent action is the master of nature? To say that it can change the operation of gravitation or change the course of a tornado would be a mere quibble. In fact the real problems which are yielded in scientific data are those which indicate the nature of reality as it exists apart from desires human in origin. That is, no principle seems inherent in reality itself. To overcome this difficulty Dewey raises a new problem. The substance of his whole argument on this point is to make knowing a mode of practical action which expresses "the way of interaction by which other natural interactions become subject to direction."
With this new epistemology comes a new criterion of truth. It is no longer a "one-one correspondence" of idea and its antecedently real object, but the consequence which results from the action which the idea guides, that is, the degree in which the anticipation inherent in the idea becomes actualized. Failure to unify action and idea has been the difficulty of Idealism, Realism and Sensationalism. The result has been the arrival at theoretical certitude through reason. If the experimental method is accepted, "theoretical certainty is assimilated to practical certainty; to security, trustworthiness of instrumental operations. 'Real' things may be as transitory as you please or as lasting in time as you please; there are specific differences like that between a flash of lightning and the history of a mountain range. In either case they are for knowledge 'events', not substances; what knowledge is interested in is the correlation of these changes among events, which means in effect that the event called the mountain range must be placed in a system consisting of a vast multitude of events. These correlations discovered, the possibility of control is in our hands. Scientific objects as statements of these interrelations are instrumentalities of control."  

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55. p128. Substance is equated with events.
Dewey's next step is to extend his functional theory so as to include mathematical ideas. Pure mathematical ideas express the "actually, existentially possible." They are dealt with symbolically and can only express ideal operations which may or may not become actual. Their only certain executed operation is the manifestation of their symbols. "Mathematical ideas are designations of possible operations in another and secondary sense, previously expressed in speaking of the possibility of symbolic operations with respect one to another. This sense of possibility is composability of operations and not possibility of performance with respect to existence. Its test is non-incompatibility." Thus it appears that Dewey is faced with two kinds of mathematical ideas, both of which he wishes to place in organic relation to action. Ideas of applied mathematics are reserved by an appeal to Einstein's relativity doctrine. But ideas of pure mathematics are operations carried out symbolically, and can never become actual. When his whole theory of the organism—in-relation-to-environment is recalled, and in the light of such recollection his pure mathematical ideas are examined, there is sufficient ground to warrant

56. Ibid. pp151, 154
57. Ibid. pp159ff.
58. Ibid. p56.
59. Ibid. pp144, 145
the the belief that he makes much ado over an inconsistent and ambiguous interpretation of the terms 'operation' and 'action'. For his system emphasizes the intimate connection of ideas and overt action as an actuality, not as mere possibility which cannot be actualized, although existentially real—an act or process of pure thought which has no connection with any end in view. The problem suggested is, whether all ideas are plans of action as instruments of control since pure mathematical ideas have no connection with actualization of operations. If the basic nature of ideas is their usage in such manner it appears that pure mathematical ideas have no aesthetic value, and should not be included among Dewey's characteristic functional ideas. It is strange that he proposed to discuss ideas apparently so irrelevant to his system.

Dewey's account of the experimental way of thinking and knowing may be briefly summarized. In knowing:
1. the antecedent is the subject-matter which originates from natural causes and carries with it a certain degree of problematicity. Natural causes are interactions of organism with environment, and objects thus produced are neither sensual, conceptual, nor a mixture of the two. They are the material of all untested ordinary experience.

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6C. Ibid. p172
2. distinction between sense-data and interpretative ideas is "deliberately instituted by the process of inquiry for the sake of carrying forward to an adequately tested conclusion, one with a title of acceptance," hence no term of distinction is absolute and fixed, but contingent and tentative, therefore material selected to serve as data and as regulative principles "constantly check one another" and the harmonious working of the two rearrange the original subject-matter in the construction of a new object, called the "known." The argument is introduced to the effect that sense-data are bound together by all kinds of interactions, sets or connections, among which are included the habitual response of the organism which is an experient, and that ideas are the perceptions of the connection of operations intended and intentionally performed and attentively noted, with their products. This is the ground of positive intellectual value. And the original perception or apprehension of sense-data in some manifold of interconnections, says Dewey, furnishes the problem for knowing instead of being knowledge itself. We must get away from the assumption "that whatever is a product of inference, in order to be valid knowledge, must be reducible to something already known immediately." The experimental way of knowing opposes such assumption on the

61.Ibid., pp. 176, 177.
62.Ibid., P182
following grounds: 1. all reflective knowledge is made a case of recognition going back to an earlier and more certain stage of knowledge, 2. there is no place for genuine discovery and novelty, 3. there is a dogmatic assumption regarding what is said to be known immediately. Even diversity and contradiction of opinions regarding the third reason, says Dewey, is itself a basis for suspicion as to the self-evident existence of knowledge. Again, if the thing to be known must be explained by identification with something else, we are faced with the problem of what the 'something else'. "There is an infinite regress," which, to avoid, we arbitrarily select and assert a 'this' or a 'that' as an object of truth directly known. But "who guards the guardians?" Dewey calls this an arbitrary dogmatism.

Again Dewey's appeal is historical on this point. "If we look at the course of science, we find a different story told. Important conclusions of science are those which distinctly refuse to be identified with anything previously known. Instead of having to be proved by being assimilated to the latter, they occasionally enhance revision of what men thought they previously knew." It follows that previous knowledge is of immense

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importance, but it is not the standard for conclusions obtained by inferential operations. That is, the conclusions of prior knowledge are 'tools' of new inquires. And "Objects of previous knowledge only supply working hypothesis for new situations: they are the source of suggestion of new operations; they direct inquiry." 67 We reflect upon objects of previous knowledge, and this involves identification; but such identification is historic, not static. Being historic it is concerned with individuals as such, and as being identical throughout a series of successive temporal changes, - analogous to the growth of personal identity. This kind of identity is secured by operations which introduce temporal continuity into what is otherwise discrete: it yields genetic and generative definitions. For the identity of an individual is constituted by continued absorption and incorporation of materials previously external - as in the growth of a person, a nation or a social movement. It demands operations that redisplay and organize what antecedently exists." 68 It is a process of "additive discrimination," the only true synthetic process, involving "likeness-and-difference."

So one sees Dewey even attempting to adjust the law of i-

67. Ibid. p. 186.
68. Ibid. p. 189.
identity to his functional epistemology and evolutionary metaphysics. But the problem suggested here is one of limited application. If identity is genetic growth, how account for the persistence and identity of aspects in the manifold of inanimate existence? Do stones and textbooks display such functional identity in themselves? Again one sees the narrowness of Dewey's functionalism illustrated in the failure to give any plausible account of such existents.

We must naturalize our intelligence, Dewet argues. To do so we must conceive the object of knowledge to be consequences which satisfy the conditions which induced the inquiry in question. 69 "We know whenever we know; that is, whenever our inquiry leads to conclusions which settle the problem out of which it grew. This truism is the end of the matter, upon the condition that we frame our theory of knowledge in accord with the pattern set by experimental methods." 70 All knowledge so arrived at has equal validity and differs none at all in principle, although there may be a decided practical difference. Accordingly, Dewey argues that all phenomena of intelligence,

69. Ibid. p. 197. Pragmatic Instrumentalism.
70. Ibid. p. 198.
whether social, ethical or physical, are equally legitimate objects of knowledge. 71 Known objects are consequents, not antecedents. There is no ground for a 'spectator theory of knowledge which places mind outside of what is known. Instead of mind beholding and grasping objects from outside the world of things, physical and social, "it is a participant, interacting with other things and knowing them provided the interaction is regulated in a definable way." 72 Intelligence is in nature as organs, instrumentalties and operations to knowing, and nature itself is neither rational nor irrational, but rational and understandable through the operation of organisms under the direction of intelligence which arises within nature as a directing process. 73 The question as to the difference between the various types of knowledge, namely, sense-data, the logical, the physical and naive experience, turns out to be one of a difference in fullness of range of conditions involved in the subject-matter dealt with. To illus-

71. Ibid. pp. 198, 199, 215, 216.
72. Ibid. p. 201. Dewey thinks Heisenberg's Principle is a final step in the dislodgement of the so-called 'Spectator theory' of knowledge.
73. Ibid. pp. 210, 215.
trate this point, I quote: "Thus the recognition that intelligence is a method operating in the world places physical knowledge with respect to other kinds of knowing. It deals with those relations which are of the broadest scope. It assures a safe foundation for other more specialized forms of knowing; not in the sense that these must be reducible to the objects in which physical knowledge terminates, but in the sense that the latter supply intellectual points of departure, and suggest operations to be employed. There is no kind of inquiry which has a monopoly of the honorable title of knowledge. The engineer, the artist, the historian, the man of affairs attain knowledge in the degree they employ methods that enable them to solve the problems or problems which develop in the subject-matter they are concerned with." Mind and thinking are responses of the organism to the doubtful as such in its quest for security. Thinking is definable objectively as overt action, and is in this wise "accessible to examination and report." Only a problem of doubt gives rise to thinking, and this problem finds support in the recognition of the 'objective character of indeterminateness', which is a real property of some natural existence.

74. Ibid. p220
75. Ibid. pp224, 225. This includes the mental in all its modes of response - emotional, volitional and intellectual. His Functional Psychology is introduced here.
76. Ibid. p229
The original of this problem is in the effort to unify in objects as experienced, their discreteness and particularity with their confluency of transition. This is accomplished by dropping out the "tertiary qualities" corresponding to Locke's secondary qualities in terms of the physical objects of science. Such abstractions by the sciences are legitimate, since "they consist of standardized relations of interrelations." But Dewey fails to tell us just what it is that does the abstracting. The point is, is not such strong 'economic positivism' likely to be forced to employ the Subjectivist Principle of an active ego, akin to Kantianism?

We come to a final statement as to Dewey's cosmology in the light of the foregoing discussion. Dewey is opposed to specific systems of metaphysics. This opposition produced his psychological standpoint, where he entertains a structural notion of reality in which there are related terms within the whole of consciousness rather than antecedent to and independent of experience. Only in one instance does he resort to a consideration strictly metaphysical, and even this article is incomplete. Its occasion

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77. Ibid. pp 232, 233, 238, 241; esp. p. 239, "tertiary qualities".
78. Ibid. p 238
was his point of departure from mechanistic biologists on Vitalism. The latter placed the ultimate origins of organisms characteristic of nature and life in the realm of metaphysics as opposed to science in general. The attack raises the question as to the nature of metaphysical inquiry. Dewey argues that the ultimate is merely the relatively fixed in time for convenience in reckoning, and that those traits which mechanistic biology cherishes as ultimate and as giving rise to life, need not necessarily be ultimate in a temporal sense. The ultimate is nil, and, since only the relatively ultimate exists, metaphysics must deal with the relatively ultimate. Man in general deals with the relatively ultimate. The conclusion which Dewey arrives at is the identification of the function of metaphysics with that of science, and the classification of all such questions as those relative to causation and ultimate origins as specific scientific questions. I quote: "Upon analysis, reference to some immanent law or cause which forced evolution will be found to be a lazy cloak for our ignorance of the specific facts needed in order to deal successfully with the question."

What, then, are the valid data for metaphysics? Dewey says they must be certain permanent, time-transcending
traits of the universe, which are irreducible and represent the very existence with which science is concerned. They are: 1. specific diverse existences, 2. interaction 3. change, and 4. evolution. Any valid system of metaphysics must deal with none other. Plurality, interaction, change and evolution produce and shape all particulars. In dealing with mind and intelligence he says we must begin with the present, 'and in the present the world is found to possess organization" in spots" of the kind called intelligence.' This existing intelligence cannot be explained away, nor by any theory which reduces it to something inferior; mind cannot be explained by explaining it away, nor explained as a development out of an original source in which the potentiality, or direction towards change towards mind is lacking.

Reality might best be conceived, Dewey argues, as just what it is experienced to be. Experience is the essence of things, and not just what is apprehended through the senses. It is in unceasing flux because of its ultimate traits. Objects and Subjects are in a common reality, and they are produced through the operation of the ultimate traits - especially those of interaction and evolution. Selves exist as relatively ultimate realities in the form of organisms, in virtue of universal consciousness specifying itself. The nervous system is the superintendent.
Objects are products of interaction and change. But both selves and objects are part and parcel of the universe of experience.

This same notion of reality is expressed time and again in The Quest For Certainty. The trait of change is made the ground of insecurity, and thus the cause of human quest. The idea of reality as it is experienced to be by the senses expresses the cosmic trait of particularity and specific diverse existents. The notion that all particulars in nature, even smells, tastes, sounds, colors, pressures, etc., are bound together in a multiplicity of interconnections, illustrates the cosmic trait of interaction. These interconnections are hit upon in various ways and from varying viewpoints, yielding new instances of laws, "but not upon intrinsically new objects of knowing and knowledge." Intelligence is an added type of interaction, and "intelligent activity of man is not something brought to bear from outside; it is nature realizing its own potentialities in behalf of a fuller and richer issue of events." Mind is a "participant, interacting with other things and knowing them, provided these interaction is regulated in a definable way." Thus Dewey.

81. QC. Ch. E.
82. Ibid. p3900
83. Ibid. p184. Cf. also p176.
84. Ibid. pp214, 215.
85. Ibid. p200.
introduces a reality shot through with intelligence, the function of which is to elucidate certain clues in experience which are present and operating in reality. The extent of control towards the achievement of human values and goods is in direct proportion to the capacity to find these clues, which are themselves connected series of correlated change "such that each linked pair leads to another in the direction of a terminal one which can be brought about by our own action."

In conclusion, Dewey accepted reality to be just as experienced in all its aspects. Things are just what they are experienced as. Reality is composed of these particular things, which are themselves in flux. The human organism is one type of these things. It interacts with other things forming its immediate environment. In virtue of its nervous system, its interaction is of a highly specialized type. There is of necessity a constant readjustment of the organism to its environment. This necessity has evolved a means of readjustment in the function of intelligence. Accordingly, this function becomes the point of primary interest in Dewey's philosophical position. To illustrate, I quote: "All notions about certainty and the fixed, about nature and the real world, about the

86.Ibid.p129
87.Ibid.p133
88.Ibid.pp23,24
nature of mind and its organs of knowing, are completely bound up with one another, and their consequences ramify into practically all important ideas entertained upon any philosophical question. They all flow; such is my thesis."

3. Dewey's Conception of God.

On the problem of the existence of God, Dewey is quite noncommittal. This fact has been verified by recent personal communication between Doctor Dewey and the writer. It is true that in his early philosophical career he accepted a God much like that of Absolute Idealists. But he has become less and less committal as the scope of his interests have been enlarged. Stated in his own words, "In my later thought I have moved to a more realistic and less absolute position."

Since Dewey in no place comes forth with a definite and positive statement about God, the problem of His existence in his system must be solved by following out certain implications. Three points of departure suggest themselves. They are Dewey's treatment values, his treat-

1. Text of letter follows: "There is a discussion of my views on religious experience in one of the last chapters of my book, The Quest for Certainty. There is also a brief reference to the same subject in my Human Nature and Conduct." Dated, Dec. 8, 1932.

ment of causation and his treatment of the ultimate. These treatments distributively and collectively refute the idea of antecedent and permanent Being, traditionally and religiously called God. This he does in the following manner: value is not placed in the past to be remembered, liked and enjoyed. Instead, it is embodied in a judgment of a possible consequence. Operations must be applied to clue judgments just as they are applied in conceptions of physical operations representative of physical objects. "Experimental empiricism in the ideas of good and bad is demanded to meet the conditions of the present situation." 3 Judgments of value always state a possibility of something to be enjoyed in the future. This is where value differs from actual empirical fact, which always always is in the past, namely, it expresses a connection of the present with future activity. To say a thing is 'satisfying' is to state an empirical fact; to say it is 'satisfactory' is to assert that it meets specific conditions, and is, in effect a judgment of value. In this wise Dewey uses an entire chapter to overthrow the moral argument for an anteced-

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3. QC. p258.
4. Ibid. p260ff.
5. Ibid. pp251, 261. This really summarizes Dewey's theory of value.
ently real Being which is the permanent ground of value.

As to any concept of the ultimate, Dewey argues that it is only the relatively fixed in time for convenience in reckoning. Accordingly, he replaces the traditional 'ultimate' with the so-called "cosmic traits". Since all that "is", is a product of these four traits, the basis for a physico-theological argument is destroyed.

As to the causal argument, I quote: "Upon analysis, reference to some immanent law or cause which forced evolution will be found to be a lazy cloak for our ignorance of the specific facts needed in order to deal successfully with the question." So the function of the same ultimate traits of reality replace the function expressed by the traditional cosmological argument.

What, then, is Dewey's attitude towards God? I pause to say that, if he lays claim to any conception of God, it is inverted relative to traditional theology. That is,

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8. Ibid. Ch. X. The construction of the good. Here the rationalistic scheme of fixed values antecedently real to experience of action is replaced with a modified empiricism which equates values with enjoyment intelligently guided. Values are to be conceived in terms of possible consequences in the future. The appeal is again to functionalism. Cf. p258ff. Dewey continues to defend his functional ethics which appeared in "Moral Theory and Practice", 1891. Moral theory is nothing more than a proposed act in idea; the act itself in its emerging.

God is consequent, not antecedent, and must be in a measure identical with nature, which is itself the source of all goods and excellences. This attitude is made clear in the discussion on "Religious Experience". We must not look an antecedently real Being as an object of religious experience, he argues. There are fortunate moments in which "objects of complete and approved enjoyment are had which is evidence that nature is capable of giving birth objects that stay with us as ideal. Nature thus supplies potential material for the embodiment of ideals. Nature...is idealizable. It lends itself to operations by which it is perfected. The process is not a passive one. Rather nature gives, not always freely, but in response to search, means and material by which the values we judge to have supreme quality may be embodied in existence...Idealism of this type is not content with dialectic proofs that the perfect is already and immutably in Being, either as a property of some higher power or as an essence. The emotional satisfactions and encouragements thus supplied are not an adequate substitute for an ideal which is projected in order to be a guide for our doings."

8. QC.pp305,306. Conception of God is akin to that of Alexander. Deity is the next level above that of any human experience; always just a level above the actual, and lures process towards perfection as an ideal.
10. Ibid.pp302,303. God is projected by man as the ideal of immanent cosmic values.
Carrying this thought still further, he says, "the religious attitude as a sense of possibilities of existence and as a devotion to the cause of these possibilities, as distinct from acceptance of what is given at the time, gradually extricates itself from unnecessary intellectual commitments." Again, "Religious faith which attaches itself to the possibilities of nature and associated living would, with its devotion to the ideal, manifest piety towards the actual.---Nature and society include within themselves a projection of ideal possibilities and contain the operations by which they are actualized. Nature may not be worshipped as divine even in the sense of intellectual love of Spinoza. But nature, including humanity, with all its defects and imperfections, may evoke heart-felt piety as the source of ideals, of possibilities of aspiration in their behalf, and as the eventual abode of all attained goods and values." 12 Again, "But of the religious attitude which is allied to acceptance of the ideality good as the to-be-realized possibilities of existence, one statement can be made with confidence. At the best all our endeavours look to the future, never to the past." 13

12. Ibid. p. 306.
The same viewpoint is defended by Dewey in his recent review of the book "Is There A God."14 His own point of view may be briefly summarized by a quotation; "As far as I can see and judge, the real meaning of growth of a secularized humanism lies here. It has been influenced by the growth of new belief based on scientific inquiry. But the more significant thing is the expansion and distribution of valid meanings and goods through large ranges of experience. ... Those who have followed to its completion the generalization of earlier ideas of the divine enjoy in countless multitudes of ways within the normal process of living and human relationship all the goods which the theist no matter how liberal, is still trying to confine to special types of experience and to particular objects and systems of objects. We can only invite those who are still tied down to the possession of the larger peace to be found in variety of distributed goods of experience."15

In view of the foregoing discussion it appears that Dewey is opposed to the traditional conception of God as it is so well expressed in Malachi 3:6a.16

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15. Ibid. p. 197.
16. For I am the Lord, I change not.
entecedently real Being is replaced by an Ideal. The kingdom of Heaven is always "coming", but never "is". God is the Ideal which is projected by humanity in its lure for values. In this wise Dewey's conception of God approaches a Humanism.

4. General Conclusion.

A. The degree to which Dewey executed the purpose of the Gifford Lectureship according to its Deed.

To begin with it might be noted that Dewey's method of procedure is not consonant with methodology in the Deed. For his methodology is fundamentally historical, whereas that of the Deed is fundamentally the way of natural science. Also he fails to frankly commit himself on the Lectureship. With such non-committal attitude the study of God, the Sole Reality, the nature and attributes of God and His relation to nature and man, as such, vanish. In all of these instances Dewey seems to fall short of the purpose of the Lectureship.

On the other hand Dewey carries out in a limited measure, the purpose of the Lectureship in his treatment of values. In fact, the foundation of morals seems to be
his primary concern. He opposes traditional Ethics.¹ The 'good' is constructed, as opposed to having antecedent being. Values are characteristic lures into futurity as opposed to passivity, and their intrinsic worth is their elucidation upon and facilitation of practical experience. There is no antecedent Being, thus, no general moral principles. There are no values in general;² all are particularistic. It follows that moral conduct is to be determined by intelligence for each occasion of moral law and action.³ Moral sanction must be determined in light of the whole situation that calls it forth, including the judgment of value relative to the possible consequences of action, guided by intelligence in idea, the unity of action as content and idea as form in striving to actualize the content of a value judgment. The traditional conception of morals as having a basis in an antecedent Being, or God, is denied a hearing, and nature itself becomes the ground of morals in that it contains all that is experience. It contains sense-data, it contains minds. And morality is determined by the reaction of the intelligence

¹. The Quest For Certainty. Chapter X-XI. Morality is made the product of intelligent action. This Strain upon morals runs throughout Dewey's system.
². Ibid. pp. 179, 208.
³. Ibid. pp. 256, 286; esp. 260, 278.
of an organism when confronted with sense-data in the light of certain value-judgments or probable consequences. Man need not go outside of nature for anything. In this wise Dewey offers an evolutionary-naturalistic theory of morals in which the function of intelligence is the cardinal principle. Through this medium the problem of evil can be solved. For "all evils are the fruits of transitional maladjustments in the movement of evolution." And readjustments to environment are most effectively made by operational intelligence.

One criticism of such a theory of values is its humanistic pragmatism. Its thesis is, That which satisfies human nature as a whole is true value. This virtually asserts that our desires are always good. But if such be true, how can one account for the many desires, which if fulfilled, would lead to error and evil? Of course Dewey might say in such case we had not canvassed all the possibilities. But even this answer would seem far from practical experience.

B. Historical Significance of Dewey's Conception of God.

Much like Whitehead's, Dewey's conception of God has no significantly historical relation. It is perhaps

5. Ibid. p. 64.
a new creation. However, there is a suggested relation to the Humanism of Comte in the interpretation of values. Also, the postulation of God as the Ideal is analogous to Comte's Conception of God as 'Le Grande Étre.'

In a less important manner the influence of neo-Hegelianism is obvious. His dissertation having been worked out in Kant's psychology, he was well acquainted with the source of German Idealism. But his early inclination was to introduce a descriptive method of philosophizing analogous to that of the sciences. He desired to establish a connection between philosophical theory and practical activity, that the former might influence the latter. This desire was satisfied through the influence of the pragmatic movement, begun by Peirce, 1878, and subsequently taken over by James. As a result he presented in complete form the logical theory which stands as the goal of his previous endeavours, and marks the beginning of his career as a pragmatist. Having already accepted the biological evolution of British Empiricists, and having for-

6. The characteristic historical method, and the supreme value placed on intelligence.
7. The Psychology of Kant; PhD dissertation at John Hopkins University, 1864.
ed it upon reality as a whole, Dewey attempts to formulate an intellectual cosmology in which rational progress is the only valid characteristic of individual and social organism. But it might be recalled that he offers no justification for adopting a biologico-evolutionary metaphysics, except that it seems convenient. Reasons for his conceptions seem aposteriori. It appears that he first imagines his objective, then rationalizes it into actuality.

C. Critical Evaluation of Dewey's Conception of God.

As has been pointed out, Dewey's whole interest as a philosopher centers, from beginning to end, upon knowledge and the knowing process, in which he makes thought a "transformationary" process going on and producing changes in reality. His earliest desire as a philosopher was to give to such notion an empirical and a psychological description. The doctrine of 'immediate empiricism' was advocated in his earliest works. 10 For some time Dewey

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sought refuge by way of support of his views in other philosophical systems; but such effort was in vain. The problem and nature of knowledge being the all important point for him, Dewey's primary task was to give a description of the knowing process which would be in harmony with his doctrine of 'immediate empiricism.' This he proposes to have done in his biological psychology. Here he proposes each 'self' to be an organism which is within reality as its environment. The nervous system of each organism is the selecting superintendent, and things are just as they are experienced through the action of the organism on its environment and by the interaction of the aggregate of extantents which compose reality. Knowledge is implicit in reality, and such action of the organism on its environment results in the synthetic activity of the organism, which process actualizes the knowledge implicit in nature in the self consciousness of the organism. To this is added the notion of an evolutionary metaphysics. Reality is in process in virtue of interaction; the self is in process in virtue of its immediate empiricism and synthetic activity. Progress is an implicit cosmic trait. Here one sees the original idealistic notion of Green and other Hegelians as the synthetic activity of the self. The

11. Especially Hegelianism.
notion is unchanged in fact. Dewey merely gives a new interpretation to its origination in order to justify his psychological method as opposed to the logical; his descriptive method as opposed to the normative. Such transition having been developed Dewey has held to it in all his works.

But such a system introduces problems equally as difficult as those which it proposes to solve. Many minor criticisms, such as loose usage of and shifting meaning of terms, have been referred to. Three major criticisms follow. First, Dewey has been unable as yet to give any worth-while reason for adopting a biological psychology, except for the implicit reason that it is a convenient vehicle for expressing his own views by analogy. In this way he makes psychology, a product of the application of the descriptive method itself, amenable to no criticism. But Dewey's methodology on the point is in question. It cannot be suggested that biological psychology elucidates the account of knowledge; nor can it be argued to be more inclusive. For there are certain existents which biological categories characteristic of the descriptive method are not fitted to explain, such as 'spirit' and 'mind'. Dewey

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12. It will be recalled that Green, Bradley and Bosanquet emphasized the synthetic activity of finite selves.
13. Supra.
evades such questions by again arbitrarily accepting
the doctrine of evolution as a cosmic trait. All else is
forced into this scheme. The fruits of the 'critical
method' are lost.

It may also be stated that, accepting the evolutionary point of view, Dewey seems to make too much of the
historical method of approach in philosophizing. Time and
again incidents are recorded with no causal nexus. The
result appears to be a substitution of persuasion for
argument and matter-of-fact. Of course, such appears to
be his heritage from German Idealists. Nevertheless, if
he advocates a biological methodology as characteristic
of the methodology of the natural sciences which symbolize
the application of the doctrine of immediate empiricism,
then, why does he fail to draw upon the natural sciences
for his data and leave the field of history to the historian?

Again, besides the practice of taking over any view
which seems to prove convenient in substantiating his own
opinion, 14 there is another ground of possible criticism.

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14. Dewey's descriptive methodology seems to have
been his own opinion for which he, once having arrived at
the opinion, looked for evidence. This is contrary to sound
logical principles. It seems that time and again Dewey
mistakes the value of exposition by metaphor and analogy
to be logical demonstration of necessary truths.
Dewey's whole interest is in knowledge. Yet, knowledge is but one aspect of experience, and is its peak instead of its base. From this it appears that Dewey is not interested in reality as such other than its embodiment in one of its particular aspects, namely, knowledge. It is true that elucidation brought about through such interpretation of knowledge is of great importance. Yet, there are certain fundamental aspects of experience which are not accounted for at all by such a scheme. Further, with a limited scope, Dewey himself must admit that any evaluation of reality as such must be inference. The question raised is one as to whether such system may be regarded as strictly philosophical.

The temperament of Dewey's philosophy is idealistic. This is made clear in his conception of the synthetic activity of the self in its relation to its environment. Such was Dewey's early notion, and this same notion is reiterated in one of his most recent works where he conceives of self-realization as nature realizing itself in spots.

15. The Quest For Certainty, p. 296.
16. Mystical insight, institution, etc.
17. The Quest For Certainty, pp. 214, 215. It will be recalled that Dewey equates nature with the absolute, the universal self-consciousness, that which is religiously and traditionally called God.
Idealistic notions are reflected in his conceptions of intelligence and understanding as implicit in reality. To get them actualized requires activity. This initial activity he describes as originating from necessity as its impetus. Once actualized they become weapons which facilitate the organism in dealing with necessity.

Back of what has been said, Dewey's philosophy, if its implications are consistently followed out, is the idealism of the Hegelian school in a different costume; the point of departure being Dewey's attempt to apply the psychological method to philosophy. Such procedure resulted in an interest in epistemology. Had Dewey not so cherished the psychological method it is possible that he would never have deserted the Hegelianism which he at one time so highly prized.

In spite of possible criticisms, Dewey has been perhaps the most influential of American philosophers. This is perhaps due to his pragmatic interests. It does not seem beside the point to say that Dewey's contribution as a philosopher is not to be found in critical discourse; rather it is to be found in its humanitarian outlook.

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18. Doctrine of Necessity. The organism is forced to act upon its environment out of necessity for self-preservation (evolutionary notion).

19. This functional epistemology is a product of Dewey's psychological method.

This is what appeared as all important for him to begin with. Adopting a metaphysics which suited his interests, Dewey began to concentrate on what he felt to be the dynamic behind all human betterment, namely, knowledge. His idealistic notions of Universal-Self-Consciousness pass into the background; his naturalistic notions come into the foreground. But deep beneath it all is the original idealistic notion of universal consciousness, religiously speaking, God. As has been indirectly suggested by Macintosh, it is Dewey's neo-positivism that forces him to frankly adopt a negative view in which 'humble agnosticism recedes under the sheltering aegis of immediate empiricism and bold denial takes place.' Things are what they are as immediately experienced, and nothing else. This may convey the notion that God is nothing but some fact or facts of immediate human experience, and the only transcendent reality worthy of belief is that which is experienceable by us or by others either now or in the future. Albeit, God as thus presented is immanent in the world of our experience 'as an existent process or arrangement, and transcends it not as an existent Being, but only

21. Throughout The Quest For Certainty there runs the notions of universal consciousness which is equated with nature.

as a possibility or order of possibility. 'God is immanent in virtue of His actuality; is transcendent in virtue of being the ground of possibility. Surely this is Idealism.
CHAPTER V

CONCLUSION

What, now, is the general result of this study?

First of all, and the most significant, this study reflects the trend of contemporary theological thought as in the direction of an increasing sympathy towards the natural sciences. The broad chasm between theology and science, the sacred and the secular—a characteristic of the medieval church and even of certain present day Fundamentalists—no longer exists. No longer are science and religion to be looked upon as conflicting elements, but as views of the same ultimate object along different perspectives. A reciprocal relation replaces a mutually exclusive one.

It has pointed out that science may be used to defend the object of religious experience. Accordingly, it is no longer to be contended that one cannot be a scientist and a religious person at the same time.

To this end the trend of contemporary theological thought is towards a doctrine of immanence.

Finally, the conceptions of God expressed by the doctrine of immanence in this study cannot be taken as ultimately conclusive. For they are implicated in the con-
temporary data of the sciences. And as science revises certain of its First Principles, at least the point of departure to a conception of God will be different. But in the search after such ultimate, evidence up to the present time points towards the conclusion that science will always be subsumed under some broader avenue of approach.
AUTOBIOGRAPHY

I, Marquis, LaFayette Harris, was born in Mason county, near Tuskegee, Alabama, March 8, 1907. I received my early secondary school education at the Cotton Valley Junior High School, Fort Davis, Alabama. I received my high school education in the cities of Cleveland, Ohio, and Atlanta, Georgia, respectively. I received my undergraduate education at the Western Reserve University, Cleveland, Ohio, and Clark University, Atlanta, Georgia, respectively, the latter from which I obtained the degree of Bachelor of Science in 1928. While an undergraduate at the latter Institution, I served as student instructor of Physics during the year 1927-'28 and became a member of the faculty as instructor of Physics and Mathematics for the year 1928-'29. I obtained the degree of Bachelor of Divinity from Gammon Theological Seminary in 1929, and the degree of Master of Sacred Theology from Boston University in 1930. I began study toward the Ph.D. degree at Boston University, but transferred to Western Reserve University where I spent the Summer of 1930. I was Professor of Physics and Dean of Men at Claflin College, Orangeburg, South Carolina, during the year 1930-'31. In September, 1931, I entered The Ohio State University, and have been enrolled for six quarters while completing the requirements for the degree of Doctor of Philosophy. Since April, 1932, I have served as Minister of the Pennsylvania Avenue Methodist Episcopal Church, Columbus, Ohio.
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ADDENDA.


