

406

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OUR FAITH IN SCIENCE

1. The Academic Treatment of Faith
2. Science corrects Grammar
3. The Nature of the Physical World

OUR FAITH IN SOCIETY

1. The Academic Treatment of Faith

The academic treatment of religion is restricted by academic proprieties. No letter of Paul or Kierkegaard could be printed in this "Journal" because they violate the academic proprieties. In this Journal, religious documents can be quoted as source material of scientific analysis but they cannot appear here for the first time.

In times like ours, this fact itself must be clearly faced lest the gap between religion and its academic treatment reach the immensity of an unbridgeable abyss. Nor, the academic calculations of scientific analysis cannot overlook one fact: the enactors of acts of faith must regard our academic activity as giving a marked preference to the older expressions of religion. John Scotus Eriugena, in this Journal, has been treated with reverence. Kierkegaard is treated with respect. But General Booth is treated with neutrality or even condescension. The Salvation Army is still alive! It is impossible for an academic magazine to forego this certain aloofness from contemporary religious life. Neutrality is a requirement of the liberal arts. For the living is not yet judged as to its fruits. Objectively considered any living faith is a half truth. He who does not like to stand convicted of saying a mere half truth, cannot make a confession of faith. It is the essence of one man's faith or one generation's religion that they can only come true in

the next man's faith and the next generation's religion. Much foolish debate could be avoided if critics of religious documents would show some understanding of this simple fact that we do not reach the future by making statements which are palpably true but that we enter the kingdom of heaven by making statements which others will have to make come true. But I cannot admit that the academic profession has ever agreed on the limitations imposed on its treatment of religion by the academic proprieties. Quite the contrary, the academic treatment declines to draw a clear line between the analysis of dead and of living religious acts. It is considered a negative quality of a religious attitude that it is a half truth. Fortunately, I shall be able to regale the reader with a truly classical quotation of such a lack of discrimination as I myself have been its target. This is one seems to me a vital one. But first let me repeat, the academic presses cannot print religious documents for the first time; they solely can analyse them much later. Now, if they do not recognize this handicap, they, in the eyes of any active group of faith, are not neutral, but enemies. It is the persistent blind spot of academic objectivity to assume that objectivity is not partisanship, that analysis is not decision. For the eyes of faith, analysis is decision. That which is analysed is treated as dead. Living processes are unverifiable by outside analysis, by establishment. To live means to be incomplete. To live, therefore, is to be in process of coming true, in process of becoming verifiable. It also means to have

the guts to be only half true and the courage to be vulnerable, on this score. The decision to impose an academic treatment on such vulnerable processes, is a death blow or at least torture to the group inspired by a living faith. The very requirement of academic procedure causes pain to the objects: from living brothers of the reviewer they are changed into objects of analysis. There is nothing more weakening, more destructive, than this withdrawal of solicitude. The brotherhood of man certainly threatens to become an empty phrase when the carriers of a living faith are carried to the dissection table of scientific analysis. The polite phrases used by the academic observer during his operation may at best be compared to an anaesthesia if not during surgery. Anesthesia or no anesthesia, the fact itself remains that surgical operations apply to sick people, and dissection applies to corpses. A Salvation Army Major who reads a treatise of his army in the Journal would be since simply by the neutral, analytical attitude of the treatment. This attitude would prove to him the limited appeal of his own zeal; probably, the borderline for the expansion of the movement is drawn by the fact that this academic mind manages to remain neutral. It would be easy to end this plea with quotations from the New Testament. But I am too serious about this enmity between academic neutrality and living processes to rest the case with an -- academic quotation. One can quote the whole New Testament,

yet settle nothing; because no quotation is a first hand statement. Quotations themselves are second hand statements like the academic analysis. It is the misfortune of the orthodox that they combat the devil of academic analysis with the Beelzebub of orthodox quotations. And I often myself have fallen victim to the attacks of orthodox quotes or academic analysts; therefore I cannot prop up my own case by any kind of quotation.

The academic community should admit that our neutrality is partisanship. Academic propriety may be very improper. To be objective does not mean to do nothing. It means definitely to do something. He who carries off a living process for the purpose of dissecting it, has decided, by his attitude, that at this juncture the life or death of this process is of no importance to him. The academic world, by claiming the right to objectivity, claims the right to risk the death of social processes. Now I would like to compel my colleagues to this admission! But alas I cannot use compulsion to prove my point. In the middle ages the living faith of the Church would have used a police force again at neutral, lukewarm, academic observers. In the Protestant centuries, the orthodoxy of the clergy thundered against "academic review" by quoting chapter and verse.

I can't mobilize the secular branch to behead the academic critics of my living faith. I can't hope to make a dent by quoting the New Testament. There is a good reason why neither

neither method will work. We must take seriously one innocent phrase of our sentence about academic propriety: "...religious documents...cannot appear here for the first time." (cf. p.1) For what do we contend by this little phrase "for the first time"? If it is not right for this Journal of Religion to preach a living faith for the first time, we may rightly conclude that it can reprint them and quote them a second or a third or a fourth time! This, however, is an intense revelation. There is then a first time, which differs in quality from the second time. That which has to be said for the first time is for this very reason in a different place of life from that which is said for the second time or quoted for the nth time. In other words, times are qualities. In matters of faith to say something for the first time, for the second time, for the third time, for the nth time, is in itself a change in quality. Nothing which is said for the first time is of the same rank as that which is said for the nth time! The academic treatment deals with all human utterance as though it had been made an indefinite number of times. It treats all utterance as invulnerable. The inspired attitude treats the utterance as though it had never been uttered before. It knows it as vulnerable, as mortal. For this is the difference between saying a truth for the first time and saying it for the nth time; that for the first time the new born truth is in great danger of being suppressed and when said for the nth time this danger is absent. The academic mentality does not move any

distinction between yet endangered and already secure truth. But if this is so the medieval scholastic execution of the unblasphemous critic, in this modern condescension by the orthodox should now remain the only answer. I offer the suggestion that the academic profession will have to learn by any man of faith and risking their claim of being impartial but that the man of faith may also have to learn that there is a time for everything and that the academic process is injected into our body politic so as to make the life and death of the spirit coextensive.

The academic world is killing the "soil of" all "object" as objects have come to have souls. Anaglyptic destroys our entomism. Objects are not inhabited by God. The academic critics are unwise if they continue to deny this. But entomists and the soul are meant to be exposed to murder and destruction but they never rise from the dead. The faithful are unwise to deny this part of the truth. The academic world is "the world" in the sense of Christian tradition. And it also is the sense of the Christian tradition that our faith cannot rise from "this world" but has to live down its sceptic neutrality. We are asked to stay in this world, to be analysed by it, and to survive the dissection.

I could now quote a whole list of academic attacks on my confessions of faith which show that actually the academic world decides over life and death of living processes without ever being conscious of its murderous powers. They pose as not doing anything to the objects of their criticism. But it is not

my purpose to look backward. I wish, on the contrary, to prove my point about the interaction of life, death and resurrection of our faith, by an analysis of our universal faith in science. I shall proceed in the academic manner. I wish to take the reader of this Journal of Religion to the physics laboratory in which I worked for a number of years as a poor assistant. I shall analyze the faith of the academic analyst par excellence; the physicist's faith, the physicist's religion, my own faith in the physicist's right to analyse, the public's faith in science all shot the marks of genuine enthusiasm. I shall analyse, that is to say dissect them, although I had the right to kill their enthusiasm. But at the end we shall see their faith rise beyond all my objections in a startling resurgence of my own faith in more modern sciences.

It will soon become clear by practical example that the synchronization of the enthusiastic life and the murderous dissection of a faith is legitimate. Both have to coexist or to be made to coexist. Analysis is not neutral. it is not objective. Analysis objectifies and neutralizes and that means it kills. But without such murder in the cathedral of our faith no weeds of our faith could be weeded out. That which is killed by analysis deserves to die. The reader who is patient enough to read on from here may easily find at the end that my dissection of physics has created more room, more spaciousness, for new

sciences of the future than he before thought possible. My dissection of physics. Any dissection of physics, any objectification of a living; force, reduces its size in the real world. It thereby creates a vacuum which attracts new life. The horror vacui sanctifi s :analysis as we gain room for new life. Physics is a most appropriate theme for dissection. It has been the one and only Science, the basis and foundation stone of progress. Faith in science and faith in its first layer, physics, became identified. This essay disentangles our faith in physics from our faith in science. Its analysis of the science of physics treats physics as ONE plane in the living process of scientific upsurges, through time ages. The rise of physics must be analysed as a religious movement. But no physicist has ever done this; they have always treated their faith as heretic if compared to their reason. But the faith in physics is the same good old faith which drove the .chocmen into theology no law - no drive us today into the social sciences. An analysis of our faith in physics has the practical effect of severing our faith in science from an ideology of physics. The physicalists have usurped an exclusive hold on the scientific process. And the pernicious and exclusiveness. The exclusiveness or model character of physics as our master science is untenable. By the acceptance of physics as the "normal" science, we block the birth of new science. The future of science depends on our

hope and faith in science. Faith accepts the fact that science is incomplete and unfinished and hope expects that the road to new sciences is not precluded by the method of physics. Theories or philosophies cannot cope with science as far as it is of the future!

Faith is the hope of future responses and processes answering our appeals. The definition of faith, even in the letter to the Hebrews of faith as the love in things to come is unsatisfactory. Faith is the certainty that our hand as it stretches out in the future will be clasped by a yet unknown but living hand maybe centuries later. Faith is the certainty that we are meant to be incomplete, half true, unfinished, so that others may complete and verify and finish. Therefore faith in new science is not a leisurely hope for things to come but an active making room for scientists to move in.

Our analysis of physics is an act of faith in the coming of a new and better science of peace and war, of men and civilizations.

Technically the approach of the following pages on our faith in physics uses fresh materials, both as to present day acts of faith and as to their ancient precedents. I have made ample use of my own experiences in the physics laboratory between 1942 and 1945, of a complete analysis of Michael Faraday's Diaries, made with my students in 1936, and of my research in the beginnings of natural science as one of the co-founders of the Paracelsus Society in Germany. For the antecedents of our sciences in ancient religion I had to renew the

religion I had to renew the classical and Egyptological studies of my youth under Wilamowitz, Diels, Vauven, Jawara Heyer and Erman. In this connection Eduard Norden's contribution to the Harvard Tercentenary gave me a most fortunate opportunity.

2. Science Corrects Grammar

One result of my observations in the laboratory of physics and in the examination of Michael Faraday's Diaries is here summed up in advance so that the reader may know what he might expect to find and what not.

As the results are numerous and divers most of them grow gradually from our investigation. The following statement does not cover the whole paper. However it puts the emphasis on the one point which is unexpected in articles or books on the history and function and the philosophy of science. The last thinker who came near to our point of view was Whewell in his Novum Organon and in his history of the inductive; his books were written a century ago. After Whewell nobody thought that science should or could be treated upon except by philosophy and history. We have treated science here as a process of creative language and religious transformation. Neither a philosophical nor a historical Journal could be found which would deal with our topic. A combination of linguistic, sociological and liturgical considerations form the specific method of this search. The conditions under which sciences originate and progress

and are real, are investigated.

The one result therefore that is not found in other treatments and that, for that reason, is here mentioned, is the fact that science while creative changes grammar. The Western World, regardless of the national language French or Italian or German or English, has, as a whole, developed its grammatical structure to new horizons under the impact of science. Unrecognized hitherto, but clearly identifiable, a new category of grammar has been created by science. This category is the tense of nouns.

The verbs "go", "I went," "we walk," "Let there be light," "there will be science," all have in their forms a tense aspect. They belong either to the present or to the past, to the completed or the incomplete future. The many varieties of tense in grammar are familiar.

The word "nature" or "world" or "universe" should have a "tense" character in accordance. Nouns in the grammar which we have inherited from the Alexandrinians, are thought of as timeless and "tenseless."

It is the discovery of this paper that this Alexandrian scheme which our schools uphold, is obsolete. Science has organized the human heritage of nouns so that they have ceased to be "blocks" of eternal entities or objects or things. Nouns have been placed in process by science. And the scientific process whenever it tackles a new field, consists in the temporalisation of the frozen and tenseless nouns of unscientific speech or language. Even nouns are not "ideas" or "essences" or substantial.

They are relative as past, present and future aggregates of reality. Science re-arranges the gold mine of our dictionaries and moves all the traditional nouns into a new relationship of permanent interplay and process.

This doctrine is opposed to the usual pre-scientific attitude of thoughtless talk. But it is equally alien to the logical and semantic approach. For the logician, words are a cloak of which he tries to strip clear thinking. He knows how arbitrary words are used. The last thing we should assume according to logic is that specific words are categorical and indispensable. Neither an absolute nor a relative truth is ascribed to new words. Thought, pure thought, in the eyes of logic, nearly always is nullified and polluted by the use of words and all their associations.

Our investigation led to a very different result. True enough that nouns like "truth", "science", "physics," "economics," "nature," are very often used meaninglessly by laymen and scientists alike. But our discovery -- surprising as it is to ourselves -- consists in the proof that it is not the semanticist or the logician but the scientist himself, in his actual research, who cures the ills of empty talk. Nature, science, truth are categorical terms! They are not "words."

The static picture of a modern language might be compared to the geological strata of the earth; science then is the volcanic force which cuts across the horizontal layers and compels these static strata to enter into communication with each other. This

communication is the scientific process. Science by encompassing the layer in which the terms "mind" and "body" and "world" were coined, and the layer during which "nature" and "universe", "science" and "rational" were employed; creates an interplay of which its own "technical" "mathematical" language is the third partner.

The word crystals are unfrozen and thawed open and proceed again in the way of living processes. Through science man is able to call upon the dead substance and evidences of his mental history, to call on them and to dismiss them at will. Relativity is not solely a mathematical argument. It is also a social one. Physicists are oft blamed by the cosmic or unvoicing under the aspect of relativity. But the human drama between science, folklore, philosophy, poetry, is equally impressive. Our principle of relativity makes science the partner in a social drama in which the scientist has to be his brother's poet, his brother's "peasant," his brother's "philosopher," "keeper," if there is to be any science.

No science without poetry. No science without the common language of the people, no science without philosophy, no science without politics.

The very nature of science is to organize the interplay of the languages used in the homes of families, the capitols of states, the sanctuaries of the churches. If science refuses to act as the interpolator of dynamic processes between those separate

layers, it is not science, it is not the science in which people have believed for the last eight hundred years with religious fervor.

The good conscience of science is imperilled today because of the frequent denial of an individual scientist that he be his brother's priest, his brother's poet, his brother's political keeper. They will part company with him if their keeping him and his keeping them is not uppermost in his mind.

This itself is not a topic for pious noyes but of scientific demonstrability. The "tense marking" quality of science has always been the keeper of the people's consciences. The denial of this linguistic function is not older than 1870. Then in self-delusion, scientific positivism broke off the bridges which connect the island of science with the adjacent banks of real life. The scientific positivist took language and words where he found them without ever saying thank you; in due time delivered his scientific discoveries to the multitude without caring what became of his terms when they became slogans on the market place.

All words of science travel the road from metaphor to scientific formula to slogan. This process of all scientific terms has become a commonplace and the physicists are the first who have woken up to the impure phases for all scientific terms among the common people.

It is the comfort of this investigation that the pre- and post- scientific phases become apparent as more than deformities or pollutions of "pure" science; they are as vital as science itself.

or pollutions of "pure" science; they are as vital as science itself. Only science must intervene. But the interpolation of the scientific process, the sloppiness and the metaphors may be purified and begin to live again. But the idea can never be to live without sloppiness or metaphors in scientific purity all the time.

By the temporal, the transient character of all nouns this perpetual life process is assured. It is rank superstition that nouns should ever seem to have existence outside a context of procedure, of history, of "practical sense." Therefore our discovery of the nature of our nouns as created by science belongs to the philosophy of religion. Science does not belong to our birth with the universe. And these ties are summed up in the term "religion." Religion in science is a necessary pause in the process which regulates our movement through the cosmos.

Science is an element in the alchemy of religion, is one aspect of our discovery; the other aspect is that science creates new categories of matter. These two aspects are one and the same fact viewed from two different angles. But that this is one and the same fact has been forgotten. That is seen in the way in which our fine materialists, have become the esoteric doctrine of some divisions of both the materialist. That science is necessary for a living religion, has been carried into the absurdity that science suffices or that it is in conflict with religion. The theologians themselves have made it next to impossible to recognize

the simple truth of John 1,1. The first sentences of the gospel of St. John are not saying all. They give the axiom of any definition of our faith. That itself (ingesting, reasoning, pro-decaying, legislating), of itself; an it compels to insist on the essential unity of all these modes of speech, on the essential identity of our faith, in all its phases.

3. The Nature of the Physical World

"The Nature of the Physical World" is the title of a well known volume of Gifford Lectures by the physicist Eddington. It is an elegant title. For in it the social, religious, political, and mental issues straddled by science are reflected as by a prism. Innocent and scientific it may sound; in fact it is past innocence and this side of science. To determine its place in our society is the aim of this essay.

We shall see that the religion of the physicist stands revealed and not only of the physicist. The religion behind all science stands revealed in the religion which these scientists share with the nations of the world. For on the basis of this religion the nations allow and demand that a universal science shall operate right across all their political borders. From 1440 to 1946, that is until physical research came under government control, science was international.

That a book title is so pregnant with meaning is rare. But that a book title in itself is symptomatic of the faith in the

community in which it is published is to be expected. Books hold the opinion of children of their authors. In naming our children we cannot help declaring our faith or unbelief. Eugen, Amos, Balcar, Harold speak on the monumental level of life-long names. Our words may be of the moment. If I call my child Trifle, I certainly betray some cynicism about the value of the human soul. Because our names ride on the wavelength on which more than one generation overlap. The name "Trifle" I give must be valid in the spirit of my own time and in the spirit of the child's lifetime, and finally, in this child's children's lifetime. Now whenever we declare ourselves in the face of more than our own generation we are compelled to disclose our religion. In our own time we may sit our digit under the bushel and may conform. Between the spirits of many generations we must become emphatic and are found out with respect to the truth in which we really glory. And Mengo rises in contempt or in his cynicism, in his personal or in his conventional truth. But glory as does when he must represent his whole age and its spirit in the teeth of other unknown generations.

Hence, names are the declarations of our faith whether we like it or not. This being so, The Nature of the Physical World declares the faith in which science and the nations of the Renaissance world glory. The average academic reader already at this point may rebel. He knows how book titles are fabricated by publishers.

The irreverence of the commercial book market now fills the academic spectator with irreverence for all book titles.

May I suggest that this, though clever, does not seem clever enough? The objective observer of the wiles and tides of book titles should combine complete contempt for mere salesmanship with the utmost reverence for the stream of speech which the publishing craze pollutes. It is the academic mind's curse that it will not revere names. And yet it must use names in order that society may respect it. "Socrates," "science," "Plato," "truth," "happiness," "greatest number," -- all these names are indispensable. Scientists are only tolerated because great names protect them against the suspicion of being drones or nihilists or rebels. What's in a name? The usual answer is: nothing. Let us repeat the famous question in this form: What is in names? And the answer must be: The present day value of our past history lives in names. To them we bow, in them we unite, through them we know our way in the dark.* And scientific reflection has always known this except for the last seventy years. The impertinence of "positivism" and "departmentalism" after 1880 began to dispense with values. The special sciences denied the dignity of names like Plato, Aristotle, Paul, Thomas, Kant, Hegel. It became the fashion to forget the philosophies which must christen the special science before it has any meaning. But even the specialists bowed to three names: Science, Progress of Science, Nature. During the last decades, the appeal for funds to the

* Beza

public was largely based on the use of these three sacred names. What is in names? Ask any scientist who had to raise funds for his research. If he is capable of self-observation --most scientists are incapable of it -- he will find that he invokes names whenever he needs help and support. Names differ from words in that names can be invoked for help, defense, and attack. Words are coin. But names are the gold standard, the frame of reference to which all words refer back. Names are the building, the structure; words are the bricks. Invoking the names, the scientists makes the people bring him the bricks.

All this should be commonplace. But it is not. Several physicists of international reputation remarked of Eddington's book title, "The Nature of the Physical World": Well, he just as well could have given it another name! Such is the degradation of the special science by 1946 that grown up men have become sheep. For he is degraded to a sheep which bleats who is unaware of the dominions, powers, principalities which govern his steps by the compelling influence of their names. These gentlemen collect money for their scientific research, write textbooks on physics, run a society of American physicists, tour the country, for a World Government, bestow a Lorenz medal or a Nobel prize, and then they shrug their shoulders and say: we could invoke, by our book titles, the public in any case. The history and background, the real drama of their science as expressed in names as Nature, Physics, World, has become opaque

and meaninglest to these slaves of routine. They are the last scientists in the sense of Nietzsche's "ultimate man." They themselves believe in science, Physics, World Peace. But they no longer can evoke and arouse faith in the people. For, the names consecrated by the sacrifices of centuries, to these specialists mean nothing.

And yet, a hundred years ago James Frank of Chicago and Otto Olaenbergh of Harvard -- the two physicists whom I approached -- could not have blasphemed against the created names of the scientific edifice. In 1847 the year of the Communist Manifesto, the Western world still knew what it meant to speak. It knew that in science, an arbitrary game is not played with paper chips, where any word could substitute for any other. They knew that there are no substitutes, no synonyms for Nature, Physics, World, because the invocation of these names has consequences absolutely distinct from the invocation of other names. Other people rally to my support when I appeal to them for the blind, the destitute, the lame as when I appeal to the public for the scientists, the intellectuals, the research workers. Do Messrs. James Frank and Otto Olaenbergh expect to collect the contributions for the blind, the destitute and the lame? Unfortunately, against the modern specialist I cannot invoke common sense. Because the modern mind has lost common sense when it comes to semantics. My friends think that everybody can define his terms as he pleases. They have never given a thought to the distinction between definition and articulation.

The distinction is this: when I am inarticulate, I try to articulate. This involves risk. I may fail. Therefore he who articulates any experience for the first time must speak as the words come to him and he must evoke names as they might appeal to his listeners and he must call things as they are called. To articulate anything for the first time means to dive into the ocean of speech for the sentence that will give me peace of mind, for the names that will induce my interlocutor to listen and for the words that will make sense between my mind and the interlocutor's mind.

To say something for the first time is so difficult that there is at best one way of saying it and very often there is no way of saying it. Much remains inarticulate. In the process of articulation the question which matters is: Can it be articulated already? Between speaker and listener and things can the necessary articulation be achieved or not? To articulate is always a new step in the history of mankind's becoming conscious of itself in conversation. But to define is a taking stock of old articulations. We define what has been said or thought or expressed or labelled before.

Definition. - undermine previous times and try to understand them. Definitions classify. Articulation originates. The physicist of today has forgotten that his science had to be articulated as the science of the natural world before he could proceed with his definitions as a physicist.

A century ago all this was well understood. Then William

Whewell published the many editions of his "Novum Organum Renovatum", his "Philosophy of the Deductive Sciences." And here, in book IV, Whewell says of the language of science: "The language of science is not arbitrary. The language of science does not consist of words or definitions or terms used at random for reasons of expediency. While Frank and Olaenbergh hold that any words will do for any book title or any belief, Whewell crisply says: (I am quoting from the 3rd edition, London 1858) p. 355 "The history of science is the history of its language." Every step in the progress of science is marked by the formation or appropriation of a technical term. (257) "In learning the meaning of scientific terms, the history of science is our dictionary." (368) "It is usual for unscientific readers to complain that the technical terms which they meet with in books of science are not accompanied by plain definitions such as they can understand. But" -- Whewell now continues with a pivotal truth known of course to all men of faith and stated in John I,1, but expressed by Whewell as the faith of the scientist, in a classical manner -- "but such definitions (as the laymen desire) cannot be given. For definitions must consist of words. And in the case of scientific terms, must consist of words which require again to be defined and so on without limit. In entering upon each science we come upon a new set of words. And how are we to learn the meaning of this collection of words? In what other language shall it be explained? In what terms shall we define

these new expressions? To this we are compelled to reply that we cannot translate these terms into any ordinary or familiar language. Here as is all other branches of knowledge the meaning of words is to be sought in the progress of thought,...in the minds of the authors of our discoveries." 369. In their discoveries these men articulate. We improve on their articulation by defining their (not "our") terms. But the action is theirs. Our definitions are but our reaction to their advancement of our science. Any definition, Whewell says elsewhere, receives its meaning from the proposition inside of which the terms are clarified by the definition. When I say "let us take the North Pole" , "us take" and "North Pole" must be defined. But no definition which forgets the proposition for which the terms require definition will be of any use. Definition which forgets the sentence, the articulation, the proposition which it serves, serves nothing. Whewell is quite caustic on this point: If we forget that definitions are secondary to the primary task of proposing, in the historical birth of articulation, a new truth, We sharpen a knife with which we have nothing to cut; we take exact aim, while we load our artillery with a blank cartridge; we apply strict rules of grammar to sentences which have no meaning. (p.37)

The book title "The Nature of the Physical World" is a proposition. It proposes to the public that they buy the book. It invokes their reverence or curiosity for Nature, Physics, World. If the author has anything genuine to say the book title also

must leave him satisfied as giving him the peace of mind which we seek by articulating a necessary and vital thought. We must speak, we feel, anuif the book title were untrue to fact, insincere and catering to the wrong people, we have not spoken as we should have. The difference between our obligation to speak and its wrong expression in a fishy title will haunt us and haunt others until it is remedied, either by redristening the book's secona edition or by adding another book or by having commentators enlarge on the proposition.

The title of a book is not a question of definition but of articulation. Articulating is the process of binding together the speaker, new insight with the listener's old prejudices on a common topic in a common moment. For any such task, the problem is not HOW to define one's terms but to articulate, to bind AT ALL.