

SCHOLASTIC ILLUSIONS

from "Wars of Families of Minds"

by William Lowe Bryan

No theory completely embraces all the conditions determining any action. Some conditions are omitted unintentionally because of ignorance. Some conditions are excluded intentionally, on the one hand as disturbances which interfere with the accuracy of experimental results, on the other hand as complications which interfere with the possibility of mathematical or logical treatment. The intentional exclusion of disturbing or complicating conditions is not a procedure which requires defense. Its defense is found in the whole history of learning, and after that in the history of the practical applications of learning. To make any progress, we must focus for certain things and be temporarily blind to environing things.

It may be, however, that in arriving at a theoretical result, either because of my ignorance, or because of the very efforts to be exact or to be logical, I shall leave out of account conditions which are not in fact insignificant, which will not be absent when my bit of theory is tried, which will be there to upset all my previsions and to bring me to confusion. My airship will not fly. In such a case, the best fortune is immediate and decisive practical trial. Decisive failure destroys our illusions, if we have them, and sets us looking for conditions which have been overlooked. Unhappily, however, decisive trial of theoretical results is often indefinitely postponed. In this case, the scholar must be of extraordinary constitution if he escape the historic disease of his kind, namely, blindness to realities which his method has not embraced.

I wish to consider two types of this illusion of the scholar. One of them, which may be called the illusion of consistency, is generally recognized. The other, not so generally recognized, I shall call the illusion of precision. I wish to show how in both cases these illusions spring directly out of the painstaking employment of methods which must be employed to discover the truth, and how, when they have risen, they render the scholar blind to certain aspects of truth which are not insignificant either in theory or in practice.

The Illusion of Consistency

I am, let us suppose, a scholar who is impressed above all things with the necessary self-consistency of the truth. Accordingly, I have spent years in developing a system of greater or less extent, which, to my mind, has the quality of complete self-consistency. I have made its consistency explicit, by stating everything in exact logical or perhaps mathematical form. Every term, every proposition or equation, every syllogism or problem is perfectly defined and the whole stands, to my mind, flawless and self-evidential. Everything in it hangs together. Everything in it can be shown to be as certain as the most certain thing in it and that thing no sane man can doubt. Here is the truth, final and clear, and here, within the field concerned, is the law for action.

Whether such a system be finally credited with great value or with small, it is sure to have certain characteristics which limit its value. Its salient merit of exact logical or mathematical consistency was brought at a price. That price was the exclusion of conditions too complicated to

be dealt with by the logical or mathematical methods employed. That price was paid by Spinoza in one field and by Newton in another. The procedure requires no defense. It is necessary. There is no definition without negation.

However, a lifetime spent in developing and contemplating such a system makes it easy to forget and ignore altogether what the method has excluded. Every clear idea, as we know experimentally, makes it harder to do justice to impressions just unlike those which belong with that idea. A system of such ideas is self-protecting somewhat after the analogy of a living organism. Every item in the system is felt to be proof of and proved by all the others. Everything in the system comes to the point of attack, makes me abnormally sensitive for faint experiences of the right sort, and abnormally oblivious to salient facts of the wrong sort. In a word, there is perhaps no hypnotic agent more powerful to sharpen the sight or to dull it than a system of ideas which one has made for himself, and whose truth seems guaranteed at every turn by complete internal consistency.

Very likely this hypnotic illusion of consistency is strongest when the system concerned is believed to be all-embracing--a philosophy of God, the world, man, what not; and the illusion is the less likely to be broken because decisive trial is so difficult if not quite impossible. However, it is not simply the philosophers who, along with their systems of beliefs, develop the illusion of consistency. No doubt every man does so in a degree and men of science along with the rest. The history of science is full of examples. It is seldom that a scientist is able to do justice to facts which controvert his most important theories. For this reason there is sober truth in the cynical remark that the progress of science requires the death of scientists.

The illusion of consistency, as I have said, is very well known, for it springs out of conditions which have been legitimately and conspicuously present throughout the history of learning. And so for centuries this illusion has been notorious as a limitation of the scholar's knowledge and practical judgment.

I turn to an analogous illusion which is less generally recognized.

The Illusion of Precision

To take a typical case, let us suppose that I am not a logician but an experimental scientist. I cultivate a distrust for philosophy. I am wary of all elaborate argumentation. Logic is a trap. I have studied facts pure and simple. I have lived in the laboratory. I do nothing except with instruments of precision. I have learned how to shut out disturbing conditions with the last degree of refinement. My results are strictly quantitative. Everything has been verified over and over and is verifiable by whom you please ad libitum. The outcome is not poetry, not a guess, not a speculation. It is science and, within its field, it is the law for action.

It would be idle in this presence to insist upon the value of such procedures and such outcomes. The chief merit of our time lies doubtless in the fact that we have succeeded better along these lines than men ever did before. And yet directly out of the methods which science must employ

there rises over and over again an illusion which stands between the scholar and the truth and which may make him a failure in practice.

Those disturbing conditions which were with infinite pains shut out may be practically insignificant. Or the scientist may take adequate account of them in a separate study. But sometimes they are not insignificant and sometimes, after having carefully shut them out of his laboratory, the scientist forgets them altogether and does not dream that they are waiting outside his laboratory door ready to take revenge when his formulæ come to trial. Unhappily the necessary practical tests are often long delayed or indecisive. This is true in every field of science and there is no field of science where such delay does not permit the illusion of precision to survive.

But when the phenomena concerned are very complicated, when, for example, we confront the complexities of human nature in the individual and in society, when we attack by exact scientific method the problems of psychology, ethics, political economy, or any science dealing with human life, and thereupon undertake to tell men what to do, we have then the best possible conditions for the development of the illusion of precision.

For on the one hand it is possible in all these fields to be as precise as one will. There are methods from the older sciences to serve as analogical models. There are, if you like, instruments of the highest precision. One has only to be scrupulous, persistent, intolerant of errors. One will end by securing results which, whatever else may be true of them, are at any rate exact. All this tends to establish in the man who does it a faith which cannot be shaken. There is my machine. There is my mathematical method. There are my statistics. There is my sure concrete fact which no one can deny, which all the world may verify. There is a bit of science which will stand till the judgment day and take its place along with all the rest. How can there be any illusion is this? Is not this precisely the death of illusions? Is not this incoming of exact science the beginning of the end of every erroneous conception of human life?

So be it. There rises here nevertheless an illusion from which few of us altogether escape. If I would remember just what my scientific work has actually made known to me, namely, a fragment, which exists never in isolation but always in flux with innumerable other things which have not been scientifically determined, that would guard me against serious illusion—that would keep me, as a scientist, from believing or from advising or from prophesying except within the safe and narrow limits of my scientific knowledge.

But in fact it is fatally easy to forget how little I know, to forget the whole tangle of things which I have left out through ignorance or shut out in the interest of accuracy, to believe in a word that the whole complex affair from which I have painfully abstracted and defined a fragment goes on by rules laid down in my monograph.

The life of the scholar tends to unfit him to succeed practically in any field, tends to make his advice inadequate in every field, unless his work as scholar is tested, corrected, and brought into due perspective with things outside his specialty by thorough-going practical experience. A lifetime spent in developing a system whose criterion of validity is its internal

logical or mathematical consistency may bring about a signal advance toward a finally valid view of all truth. In like manner a lifetime spent in intelligent scientific research makes its contribution to theoretical and in the long run to practical knowledge. But never, I believe, does either of these procedures or both of them combined determine all the conditions of any action. Always some of these conditions are shut out through ignorance or for the sake of consistency or for the sake of accuracy. From these excluded conditions the eye of the scholar is holden so that he cannot see them. And when from the height of his learning he tells the foolish multitude what to do, it is not simply the multitude which replies that he also is foolish. It is over and over again the greater reality which, speaking through the event, brings him to confusion.