THE PRINCIPLE OF ANARCHY

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The principle of anarchy is the principle that the times, places, and amounts of energy transformations in the world do not, in general, take place according to laws of any kind, as "law" is understood in physics. In other words, the notion, maintained by Laplace and others, that everything is locked in a rigid determinism, is false. Reasons are given for believing that the generalization of experience proposed here is the correct one.

Men cannot form any judgment about the universe without using the thinking process of generalization. They must use inductive reasoning, but all know from many failures of the past that it is dangerous. Dr. R. A. Millikan has written:

> This generalizing farther than the observed facts warrant, this tendency to assume that our finite minds have at any time attained to a complete understanding even of the basis of the physical universe, this sort of blunder has been made over and over again in all periods of the world's history and in all domains of thought. It has been the chief sin of philosophy, and the worst stupidity of science—this assumption of unpossessed knowledge, this dogmatic assertiveness, sometimes positive, sometimes negative, about matters concerning which we have no information.

One of the most important generalizations in science is that the universe is controlled according to invariant laws. This view has led to the belief that freewill does not exist, and that man is not responsible for his acts.

It is also a part of this vast generalization that man does not have a soul—that he is a purely physical system. The principle of anarchy denies that this generalization is valid, and insists that common sense is valid in concluding that some things in the universe are controlled according to invariant laws while some other things are not controlled in this way.

How did scientists reach their conclusion that all events, no matter how small, take place according to invariant laws? It appears from history that the general idea was developed in theological discussions in the middle ages.

Descartes made an important addition to the theory by thinking that physical events may be described as matter in motion. His analytic geometry was an important addition to mathematics needed for giving detailed descriptions of motion.

A little later Newton added enough to mathematics to make the calculus a powerful tool, and stated his extremely important laws of motion and his law of gravitation. At this point the human race had made a fine start toward the vast—and false—generalization that the universe is a huge machine.

In human society there is a form of action which may be called the gold rush effect. In a previous generation, miners rushed to stake claims as nearly as possible to the original claim on which gold was found. When Newton made his grand discoveries, other scientists used his *Principia* as their guide book, and tried to find physical laws which are similar to his laws. The history of this long period shows that their success was very great indeed. This great success was basic to the vast generalization that the universe is absolutely deterministic.

It is also a part of the history of gold mining that miners often were so determined to find gold that they gave no attention to other valuable minerals. And this has certainly been true for the "gold rush effect" in science. Newton's great discoveries illuminated minds in some ways; but like a bright light, they blinded eyes to the existence of things in shadows. But these things in shadows may be important and dangerous.

The belief was developed that everything can in principle be predicted; but this is most certainly a false generalization. Stand a long, straight, slender column having a circular cross section and rounded ends in a vertical position, and have a guide at the top so that it will not fall. Place weights on the top. It is possible to determine at what load the column will collapse, but it is not possible to determine in which direction the bending will take place.

Consider the case in which a wire is loaded, as in the experiment for determining Young's modulus of elasticity, by stretching the wire; it is not possible to determine at which point along its length the wire will break.

Searchers for laws gave little thought to such things as these, for they had made the finding of laws their great objective. Their minds were thus closed to some of the great facts of human existence.

In forming general conceptions, experiences of life in general are surely as important as those formed in laboratories. One great generalization gained from experience is that natural processes destroy all of the works of man. No sooner is a bridge constructed than it starts to deteriorate; and the same applies to buildings, dams, factories, machines, instruments, and all other man-made things.

The facts are so well known that it is not necessary to discuss them. Depreciation is a great principle of the physical universe, but, oddly enough, not a principle of physics and chemistry.

Except in theory, it is not possible to separate macroscopic and microscopic events. On the small scale, the unilateral trend of events is described by the second law of thermodynamics: systems go from a lower to a greater state of probability. One is consistent in thinking that depreciation is described by the second law of thermodynamics extended to include macroscopic events.

This extension is really essential; rusting of steel, which is a microscopic process, may cause a bridge to collapse, which is macroscopic. A hard wind may destroy a roof, allow rain to enter a building, and start many microscopic decay processes.

In developing the statistical explanation of the second law, it was accepted that microscopic events take place according to the invariant laws, but that so very many things are involved that calculations are impossible. The statistical concept was adopted as a practical necessity without theoretical justification.

When one considers this matter from the point of view of the extended second law, he recognizes that in destroying the works of man, natural processes act in such a way that detailed predictions are impossible. There is no way of determining which building will be the next to be destroyed by a tornado or a fire; or when and where a flood will damage a city.

There is no good reason for claiming that nature is predictable when one can predict only a few of the very many

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events which take place. As may be seen from the simple cases of the column and the wire—and many similar cases can be described—no amount of investigation will suffice to predict many things.

The vast generalization that nature is absolutely predictable was based originally upon only a selected part of the evidence, and it is colossally false. Certainly the most simple conclusion, and the one which is consistent with the statistical concept of the second law, is that the principle of anarchy is true, and that nature has an absolutely lawless aspect. The times, places, and amounts of energy transformations involved in depreciation and accidents cannot be described by laws: they are anarchical.

The truth of the principles of anarchy is shown by the statistical character of radioactivity: it is not possible to give any law for describing the behavior of a Geiger counter in the presence of a sample of radium.

In the room in which I write there are many things which are not in chemical equilibrium with the oxygen of the atmosphere. Ordinary experience indicates that most of these things eventually will be burned; but there is no way for determining the place, time, and rate of combustion. Certainly it is more reasonable to say that there are no laws for describing these things than to say that there are laws which scientists cannot hope to discover.

No physicist would consider it worth his time to try to determine in advance the times, places, and amounts of the energy transformations in his automobile engine when he drives to his laboratory. No one will try to find laws for describing the energy transformations in the muscles of the fly which annoys him.

The evidence for anarchy is enormous, and it should not be disregarded. It is extremely misleading to think that events take place according to laws so completely hidden that we can not hope to discover their details.

The physicist and engineer have no difficulties in making apparatus and machines which function in nearly predictable ways. In their bodies there are stores of energy at low entropy, and by being able to control energy transformations in their muscles, properly regulated in time, place, and amount, they produce their highly improbable devices.

In so doing they do not break any law of nature, because there is no law of nature according to which these transformations are regulated. One cannot break a law which does not exit.

I am accepting here the philosophy of dualism, that man is soul and body. This was the ancient view, and it was accepted by the greatest physicists, Descartes, Newton, Maxwell, and Einstein. I consider that biologists and psychologists who attempt to discard the conception of soul have carried a generalization too far.

Physicists and chemists know that they do not know matter directly, and that present conceptions have been reached by long chains of inference from many experiments. Rather, matter is an unknown thing, and not at all the starting point in scientific investigations.

Mathematics comes from within the human mind; and its existence is not known to be physical or chemical. It would be illogical first to use mathematics for explaining physics and chemistry, then to use these to explain physiology, and finally the anatomy and physiology of the brain to explain the mathematics with which one started. The psychologist who attempts to explain mind in physical terms is trying to understand the known in terms of the unknown, a most foolish attempt.

The principle of anarchy permits freedom of the soul to control the times, places, and amounts of energy transformations without violating any natural laws. Energy at low entropy is necessary for operating the body, but it is not sufficient for explaining its operation.

In order to explain its operation, and to explain how it is caused to exist in a generally lawless universe of matter, it is necessary to recognize the existence of something which creates improbable things and counteracts anarchy. This something, as is apparent from work of design by engineers and others, makes much use of mathematics, which is nonphysical.

Many organic molecules are asymmetrical, and their asymmetry must be maintained against a tendency toward symmetry.[1] This shows that an anti-anarchical control exists, and that it operates at the molecular level of organization. It does not show that it may not act otherwise. The body is held in its improbable state by transferring its increase in entropy mostly to heat at high entropy.

One of the general facts of life is that man must repair and maintain his structures, machines, and instruments. In so doing, he counteracts the anarchical processes of the physical universe. His soul controls according to his desires the times, places, and amounts of energy transformations in his body, and he creates improbable things where they would not exist otherwise. Much the same thing must be done in organisms.

Really, there never has been any adequate reason for discarding the conception of soul, or for believing that the universe contains nothing for which physics and chemistry do not provide adequate explanation.

Mathematics exists: the person who labors over a problem in pure mathematics is not dealing with something which does not exist. There is no good reason for thinking that mathematics has the same kind of existence as a kickable rock.

Mathematical and other knowledge exists as a part, or aspect, of the totality of things, that is, as an aspect of the universe, but not as a material part, for it has a property which matter does not have, that of being transmissible at the velocity of light from one place to another. The special theory of relativity shows that mass becomes infinite at the velocity of light, and therefore that it is not possible to move any massive object at the velocity of light. But all of the knowledge of a library may be sent by radio and television from one place to another at the velocity of light.

The conception of soul was discarded for a bad reason, namely to form the false generalization of a universe operating according to absolutely invariant laws. Recognizing that the principle of anarchy is true, can help to restore the conception of soul to its proper place.

The correct generalization appears to be that the universe is anarchical in general, and that order exists only when it is introduced and maintained by soul. After a long detour, it may be that scholars have returned nearly to the point where science left theology.

Reference

[1]Helmick, Larry S. 1975. Origin and maintenance of optical activity, *Creation Research Society Quarterly*, 12(3):156-164.