

Reality, Truth, and the Effect of Science on the Behavior of Human Society

by
Roger Ellman

Abstract

The point of view that the questions, "What is truth?" and "What is real?" are meaningless is not only incorrect but negative and harmful in its suppression of inquiry and progress that could otherwise take place.

That state of affairs has existed for so many human lifetimes that it has essentially implanted in our collective and individual thinking the incorrect belief that there is no absolute truth.

We have gone from inability to determine the truth to non-belief in its existence and then to belief that truth, and reality, are whatever we choose to believe them to be and can force on our fellows.

The great damage that such thinking does is the license that it gives to create, choose, decide upon one's own "reality" and then act accordingly. Such thinking ultimately gives us war, rapine, holocausts, genocide.

Science on the large scale, dealing with the fundamentals of reality and the universe, has always had a major effect on the non-scientific - social - general philosophic thinking of society and its leaders.

And, upon Einstein's insistence that there is no absolute frame of reference, the probabilistic universe of quantum mechanics, and the distortion of Heisenberg uncertainty from measurement uncertainty to actual indeterminacy we can lay some of the responsibility for the horrors and tragedies of the 20th and 21st Centuries.

Roger Ellman, The-Origin Foundation, Inc.
320 Gemma Circle, Santa Rosa, CA 95404, USA
RogerEllman@The-Origin.org
<http://www.The-Origin.org>

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SCIENCE AND SOCIETY

Science on the large scale, that is science dealing with the fundamentals of reality and the universe, has always had and still has a major effect on the non-scientific - social - general philosophic thinking of that science's society and its leaders.

- The beginning of the scientific method and the work of scientists such as Copernicus and Galileo led to the new period of "The Age of Reason" and "The Enlightenment" – rationality and empiricism replacing dogma and faith.
- The new developments that Newton introduced led directly to the concept of the "clockwork universe" and the strong belief in laws, order and regularity.
- And, Einstein's insistence that there is no absolute frame of reference, the probabilistic universe of quantum mechanics, and the distortion of Heisenberg uncertainty from measurement uncertainty to actual indeterminacy resulted in our contemporary outlook of a probabilistic reality with no certainty, everything relative and no firm truths.

And, upon those last three we can lay some of the responsibility for the horrors and tragedies of the 20th and 21st Centuries.

How is that so ?

The problem is the general denial of absolute truth and the general acceptance of its contrary – that everything is relative, indeterminate, probabilistic. However, a statement and its contradiction cannot be simultaneously true. Therefore, there are some absolute truths. Thus there is absolute truth, which is the collective body of absolute truths.

This develops in detail as follows.

REALITY¹

Reality is that which exists, which is. It includes material reality [matter and energy in their various manifestations] and non-material reality [ideas, concepts, feelings, events, *etc.*].

Reality is objective. There can be no subjective reality. The skeptical objections and their refutation are as follows.

- The skeptic who contends that there are different realities for different persons or different situations misunderstands through error in perception or error in judgment. Objective reality is independent of perception and judgment. It exists in itself.

Different persons may experience different personal realities because each experiences a personal sub-set of the comprehensive totality of reality.

- Some skeptics acknowledge the independent objective existence of material reality but contend that ideas and concepts exist only by virtue of minds thinking of them and have no independent objective existence. That contention is in error as follows.

If all minds ceased and subsequently new minds arose, those new minds would develop some of the same ideas and concepts that were in the earlier, now ceased,

minds *e.g.*: truth, goodness, right and wrong, beauty, *etc.*, and other abstract concepts such as mathematics and logic. If that ceasing of existing minds and the subsequent arising of new minds were to occur many times over, some of the same fundamental ideas and concepts would reappear in each new set of minds. Such ideas and concepts exist in themselves independently of minds to think of them. They have the same objective existence as does material reality. Some of them are, for example: truth, goodness, justice, right and wrong, love, beauty.

TRUTH

Truth is that which is in agreement with reality. It is objective truth because it corresponds with objective reality. It is absolute truth because there is only one objective reality.

A judgment is a conclusion as to the truth or falsity of a specific statement; that is, a judgment is a conclusion that a specific statement is in agreement with reality [is true] or is not in agreement with reality [is false].

- There can be no subjective truth. Apparent subjective truth results from errors in perception of reality or from errors in judgment as to the agreement with reality, or both. There is only one reality.
- There can be doubt, questions, or issues with regard to specific truths, the doubt arising from insufficient information or from concern as to the validity of the reasoning to reach the judgment. Those problems do not affect objective reality nor objective truth. They only affect our ability to know the specific truths, an effect that can be reduced or removed with better information or better reasoning or both.
- A judgment is conclusively certain if it is impossible for new evidence to change it and its reasoning is beyond criticism. [For example, it is conclusively certain that the sum of the interior angles of a plane triangle is a straight line].
- Otherwise the judgment is in doubt to the degree that those two conditions are not met. The possible states of doubt range from "nearly" or "practically" certain through certain "so far" or "at this time" or "per a preponderance of the evidence" on to the genuinely doubtful. But, such doubt does not change objective reality nor objective truth -- it only describes the limits of our knowledge of the truth.

KNOWLEDGE

Knowledge is accumulated truth. There are two sources or methods to obtaining knowledge: information obtained via the senses [empirical, physical knowledge] and conclusions obtained from logical, rational deduction [metaphysical knowledge]. Both are subject to error; however, that defect is not comprehensive.

The senses may be in error some times through unintended or unrecognized distortions in perception or because of error in our comprehension of that which the senses deliver to us, but the senses are not comprehensively, consistently in error. If our senses were not largely reliable it would be impossible for us to successfully exist. Therefore, while we cannot rely absolutely on the senses [empirical, physical information] as a source of knowledge nevertheless the senses are a valuable and largely reliable source of knowledge.

Likewise, in spite of our best efforts, our logical, rational thinking and analyses can be in error through deficiency in the facts available to us upon which the rationality is based or because of defects in the logic that we apply to the problem. But, our logical, rational thinking is not comprehensively, consistently in error. Again, if our rationality were not largely reliable it would be impossible for us to successfully exist. Therefore, while we cannot rely absolutely on logic

and reasoning [metaphysics] as a source of knowledge nevertheless it is a valuable and largely reliable source of knowledge.

HOW WE CAN FIND TRUTH

Then, what is the key to accurate, valid, reliable knowledge? The pertinent factors bearing on the validity of any truth, any component of knowledge, are:

- the causality or mechanism involved,
- non-dependence on unsubstantiated assumptions, and
- valid relating to all other truths, to the body of validated knowledge.

These operate as follows.

- Causality or mechanism is apparent from observation and experience which show that every thing and every event has a cause, and that those causes are themselves the results of precedent causes, and *ad infinitum*. Defining and comprehending the causality or mechanism operating to produce any contended or proposed truth is essential to authenticating or validating that truth.

The candidate truth cannot be deemed valid until its causes and mechanism are analyzed back to an already substantiated operating cause upon which it effectively depends. If that is lacking then it is always possible that a candidate truth will be found not to have a valid precedent operating cause, a valid mechanism in its precedence and, therefore, itself not be valid.

- Assumptions are proposed or contended truths, proposed or contended components of knowledge, that lack sufficient proof or justification to credit them as real truths, as really in agreement with reality. Clearly that infection cannot be part of knowledge without contaminating the whole.

It is not easy to avoid assumptions. Personal prejudices and beliefs may not be apparent to their holder, or they may be apparent but are nevertheless deemed exceptions to the requirement prohibiting assumptions. That may be because he considers them so important or fundamental as to be beyond question.

Or it may be because he is psycho-emotionally wedded to them, dependent on them. For example, in the history of philosophy the God assumption appears abundantly, major instances being, for example, Augustine, Aquinas and Descartes.

In the sciences, hypotheses that have not [or not yet] succeeded in advancing to the state of completely determined and validated laws nevertheless acquire over time the status of being treated as if completely validated and not subject to questioning. Major modern instances of this are the “Hubble Constant” and its related cosmology and the irresolvable inconsistency of Quantum Mechanics and Einstein’s General Relativity’s treatment of gravitation.

In addition there can also be assumptions that are so embedded in the psyche of the pursuer of knowledge that he is not even aware of their presence and influence on his thinking and research.

- Validly relating to the body of validated knowledge is fundamental to what knowledge is: accumulated truth, assembled agreement with reality, that is agreement with that which is. Overall consistency is a fundamental requirement. A component of knowledge not being so compatible would constitute a contradiction, the holding that a thing and its refutation are simultaneously valid.

If those criteria are met then contributions to knowledge produced physically, that is using the senses, or produced metaphysically, that is using reasoning, or produced using both are reliable validated components of knowledge.

Just as there is only one reality and can be only one reality, so is there and can there be only one knowledge, one overall collection of truths, one system of everything.

THE PROBLEM OF ABSOLUTE TRUTH

Truth, being that which is in agreement with reality, is objective truth because it corresponds with objective reality.

It is absolute truth because there is only one objective reality.

The point of view that the questions, "What is truth?" and "What is real?" are meaningless questions without answers is not only incorrect but quite negative and harmful in that it suppresses inquiry and progress that could otherwise take place.

Whether we can know, sense, measure, or understand some aspect of reality or not it still, nevertheless, is.

Its being does not depend on our consent, nor our observation, nor our understanding of it, nor even our own being. We are not gods.

The problem is not whether there is absolute truth or not -- there is. The problem is finding out, coming to know, what the absolute truth is, what is true and what is not. Just what is the "real" reality.

This problem, the difficulty in determining the truth about reality, has beset mankind since the earliest stages of the development of our reasoning. That difficulty -- many have deemed it an impossibility and still do -- has resulted in a more or less collective decision to grant equal validity to a number of different versions of the truth in spite of their being mutually contradictory.

Not that individuals, organizations (e.g. religions, businesses, academia) and governments hold the opinion that their own version of the truth is not correct. Rather, they ardently believe in the correctness of their own views. But, their inability to prove their views and their inability to defeat differing or opposing views necessitates their getting along in some fashion with those other views and the multiplicity of contradictory views of reality.

That state of affairs has existed for so many human lifetimes that it has essentially implanted in our collective and individual thinking the incorrect belief that there is no absolute truth, that truth is what we say it is -- especially that truth is what we can enforce it to be. The contemporary outlook is of a probabilistic reality with no certainty, everything relative, no firm truths.

We have gone from inability to determine the truth to non-belief in its existence and then to belief that truth, and reality, are whatever we believe them to be and can force our fellow (or an organization or government) to accept. The most significant characteristic of the 20th Century, other than its explosion of technology, has been its adoption of the attitude that truth is different for each person and each case, that it is what each individual perceives it to be -- that there is no objective reality, only the subjective reality as perceived by each individual.

The great damage that such thinking does is the license that it gives. It gives license to create, choose, decide upon one's own "reality" and then act accordingly. Such thinking ultimately gives us war, rapine, holocausts.

But, if there is an objective reality, objective truth, then, even if we are not able to completely know and understand it, we are subject to it. We are measured and judged by it; we experience the effects and consequences of it whether we agree and approve or not, and we are compelled to behave accordingly.

*Thus objective reality and objective truth,
which indeed exist,
also are desirable and beneficial.*

They are, in fact, essential to civilized society.

We can lay some of the responsibility for the horrors and tragedies of the 20th and 21st Centuries upon Einstein's insistence that there is no absolute frame of reference, the probabilistic universe of quantum mechanics, and the attribution of actual uncertainty or indeterminism to all physical objects, an extension far beyond the original valid Heisenberg Uncertainty of measurement due to the act of measurement changing the object measured.

In other words, the problem is the conflict of science with rationality and absolute reality, absolute truth. The resolution of that conflict is as follows.

[1] - In the paper *The Einstein – Lorentz Dispute Revisited*² it is shown, based upon new astrophysical and cosmological data not available to Einstein, that Einstein's comprehensive denying of an absolute frame of reference for the universe is incorrect and that the universe has, and is, an absolute universal prime frame of reference.

[2] - Likewise, the nature of material reality as developed and proven in *The Origin and Its Meaning*³, summarized relative to Quantum Mechanics in the book's *Appendix B*³, and in particular the centers-of-oscillation of which matter is composed, dismantles the random and illogical contentions of Quantum Mechanics by directly accounting for that behavior in the logical, classical sense.

- The Quantum Mechanics “*state*” of a particle is the particular instantaneous position in the oscillatory waveform of its center-of-oscillation that it is at a particular moment.

- The waveform of the center-of-oscillation is the “*wavefunction*” of Quantum Mechanics.
- The center-of-oscillation's oscillation over a range of instantaneous values is the Quantum Mechanics described behavior that particles are in a *superposition of all possible states* until a *measurement / observation* causes the *superposition* to *collapse* to the *state measured / observed*.
- The *collapse* is the selection of that particular instantaneous position of the waveform of the center-of-oscillation that it happens to occupy at the instant of the *measurement / observation*.

- Quantum Mechanics offers no causality, no mechanism for its contentions. Thus it lacks one of the fundamental requisites for finding truth.

[3] - In view of the above the *state* of a particle is always definite and determined. The particle is where it is and it is going where and how it is going, both so long as it is independent of any interfering, disturbing action by an observer.

- There is no actual *uncertainty* about the *state* of the particle; its *state* is certain and definite

- However, it is impossible to observe the location or motion of a particle without disturbing it. The act of observation changes the particle's location and / or motion so that while data can be obtained indicating what the location and / or motion of the particle was immediately prior to the observation, those data will no longer be currently valid because the disturbing effect of the observation has resulted in the particle having a new, different location and / or motion.

- Therefore, observer knowledge of the *state* of a particle is always *uncertain*.

- The reason for this is that for data about the particle to be obtained, information must travel from the particle to the observer and that transmission / communication results in its source, the particle, undergoing change.

*Thus objective reality,
which is essential to civilized society,
but has been denied for over a century through error,
is now fully restored.*

References

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