

On Science and Society

Science on the large scale, that is science dealing with the fundamentals of reality and the universe, has always had 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 resulted in the new period of "The Age of Reason" and "The Enlightenment" with their 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 theory of relativity coupled with Heisenberg's Uncertainty and 20th Century Quantum Mechanics resulted in our contemporary outlook of a probabilistic reality with no certainty, everything relative and no firm truths.

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

How is that so ?

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.

Truth is that which conforms to and describes reality. Reality is that which is, not only matter and energy in their various forms but

also: feelings and emotions, ideas and cultures, languages and arts, and so forth.

The problem of truth has beset mankind since the earliest stages of the development of our reasoning. It 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 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.

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 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 - that all is relative.

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, genocide.

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

*Thus absolute 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, with *Absolute Reality* and *Absolute Truth* as presented in the preceding sections on *Philosophic Fundamentals*, pages 1 – 19. Put another way, the problem is the conflict with the requirements for valid *knowledge* presented there.

The resolution of that conflict is as follows.

[1] - In the paper *The Einstein - Lorentz Dispute Revisited*¹ 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*², summarized relative to Quantum Mechanics in its *Appendix B*², in particular the centers-of-oscillation of which matter is composed, dismantles the contended indeterminism 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.

- 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 is that for data about the particle to be obtained, information must travel from the particle to the observer and that 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

- [1] R. Ellman, *The Einstein – Lorentz Dispute Revisited* , available at <http://www.arXiv.org>, arXiv:physics/9808052 [pdf].
- [2] *The Origin and Its Meaning*, Roger Ellman, The-Origin Foundation, Inc., 1996, Available at <http://www.The-Origin.org> .