

Scientific Dissidence

A Revolution in the Way Science is Done?

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Introduction

Although acknowledging tension within the scientific community, Steven Goldman's *Science Wars* lectures primarily address the hostility of the non scientific intellectual community and general public to science, beginning in the 1950s and 60s, and culminating in the "Science Wars" of the 1990s.

In the 1960's, a number of books written by members of the scientific community who had become interested in the history and philosophy of science concluded that the historical record made it clear that scientific knowledge incorporates judgments that are not strictly logical or factual. Scientific theories are not unique accounts of reality; they do not converge on a "correct" description of reality, but in fact are interpretations of experience.

Concurrently, French intellectuals, especially Michal Foucault and Jacques Derrida launched an even broader critique on the concepts of knowledge and objectivity in general, claiming all such concepts are historical and ideological and reflect certain perspectives on experience, and in particular the perspectives of the experience of the dominant class of society at a given time. Ideas such as objectivity, knowledge and truth are in fact the result of cultural prejudices.

The convergence of these two views led to what Goldman calls the post modernism of 1980s: (all things are relative). Postmodernists rejected the idea that reason is objective, value neutral, and is the universal means by which human beings can reach truth and resolve problems. These three trends led to the science wars of the 1990s.¹

David Kaiser's book *How the Hippies Saved Physics* looks at aspects of the scientific community since the 1970's. The focus of the book is the Fundamental Fysiks Group (FFG), founded in San Francisco in May 1975 by physicists Elizabeth Rauscher and George Weissmann, at the time both graduate students at the University of California, Berkeley. The group held informal discussions to explore the philosophical implications of quantum theory. Leading members included Fritjof Capra, John Clauser, Philippe Eberhard, Nick Herbert, Jack Sarfatti, Saul-Paul Sirag, Henry Stapp, and Fred Alan Wolf.

Although in many ways held in disdain by the mainstream, this group's intense, unstructured brainstorming sessions planted the seeds for today's mainstream interest in quantum information science. Along the way, with parallel efforts from a few other isolated physicists, they contributed a sea change in how we think about information, communication, computation, and the quantum world.² Goldman's *Science Wars* lectures and Kaiser's book in many ways complement one another in helping to understand how modern physics is currently "done".

Ambivalence Within the Scientific Community

Goldman Argues that the science wars were a symptom of a much deeper conflict within science; an ambivalence of what the objective of science is, which has persisted for 400 years, and which is imbedded in the 2400 year old war in western philosophy over the meaning of knowledge, truth, reason, and reality. Are these absolute or relative?³

The absolute or relative alternatives correspond to two methods or philosophies or views of science. The archeological view sees the scientist as discovering what is out there in the external world, as an absolute. The other view sees the scientist as construing or interpreting experience based on a set of rules, which makes the results of science relative.⁴

If scientists are actually discovering absolute Knowledge, Truth, and Reality, the obvious question is why have science's accounts of almost everything constantly changed over the years.

For example, the absolute hard Reality of the atom as the fundamental unit of matter was believed until 1898, when J.J. Thompson showed that the atom had the negatively charged electron particles evenly distributed throughout a sphere of positively charged material. Then in 1909, Ernest Rutherford demonstrated that the reality of the atom is mostly empty space with a small positively charged nucleus containing most of the mass, and low mass negatively charged particles orbiting this nucleus. Then in 1913 Bohr showed that the reality of the atom nucleus includes a number of relatively high mass particles with positive charge called protons, sometimes with neutral particles of about the same mass called neutrons. Then, in 1964, Murray Gell-Mann concluded that the reality of the atom nucleus was quarks.

The habit of calling a relative model or conception an absolute reality seems to be the result of a type of reasoning called "affirming the consequent", which early scientists recognized as a problem: "If my theory predicts a certain outcome, and the outcome occurs, this proves my theory." However, just because an experiment turns out a certain way does not mean a particular hypothesis is correct, Yet this flawed reasoning is at the core of modern science. ⁵

Folly of the Mainstream Scientific Community

Most people appreciate the ability of the scientific community to provide theories that correctly predict, and result in useful products. No one denies that ipods or light bulbs work. However, the repeated (and in hind sight always incorrect) insistence by some members of the scientific community in particular, and the "mainstream scientific community" in general over the years that their theories also represent "reality" has been a source of vexation for those inside as well as outside of the scientific community.

"Alternative" science; that is, science outside the mainstream is practiced by many competent scientists, and suggests a measure of true scientific inquiry. [Kaiser notes](#) the impossibility of cleaving off "acceptable" science from "wild and wooly" ideas, the criterion for both categories being determined by the mainstream. Physicists within the scientific community may deal in both.

"Alternative" science may produce alternative theories on topics acceptable to mainstream science.

Goldman notes a number of cases in which the mainstream scientific community scoffed at some of the ideas held by scientists, sometimes for years, before these ideas were finally accepted:

Thomas Gold 1920-2004 was a Cornell physicist. A number of theories turned out to be very fertile, but some were mocked until it was shown there was something to them after all. He published a paper on how the inner ear works which was dismissed for decades until it was proved correct. For years he argued that methane-natural gas- and oil are produced abiotically through geological processes deep within the earth, and deep biological processes. Bacterial communities deep within earth also produce, so not all methane and oil are the residue of fossilized carbon material. For decades these were considered wild ideas, but now are considered credible. He was marginalized as a maverick physicist. ⁶

It took 6 years before Howard Temin's (1934-1994) claim that RNA could reproduce itself by connecting to DNA (reverse transcriptase) was accepted.

For years Stanley Prusiner was mocked for his concept of prions, but then mad cow disease came along and he won the Nobel prize in 1997. ⁷

Some ideas within the perview of mainstream science are still not accepted, regardless of apparent expert evidence in support of them:

Halton Arp should be considered a leader in astronomy, but is an outsider from a Kuhnian paradigm perspective because he challenges the prevailing paradigm of the expanding universe; of how we should

interpret the red shift in light from distant galaxies. He argues that there is observational evidence showing that quasars, objects with very high red shifts, are much closer to us than their red shift implies; that there is something else out there causing the red shift. He has argued this for decades and has collected what appears to be a convincing body of data to prove his point. He presents anomalies that are not enough to force a crisis, given the stakes of cosmologists in the prevailing paradigm.⁸

Casualties of War

“Alternative” science may also produce alternative theories which have no place in mainstream science.

Brian Josephson, Nobel prize Laureate and discoverer of the Josephson Effect, has commented on mainstream attacks of respected scientists for delving into “heretical” ideas. These attacks occur even though substantiating evidence may be provided.

Robert Jahn, an expert in rocket engineering was forced to resign his position as Dean of the Faculty of Engineering at Princeton University because of his research, which has been replicated, showing the effect of human intension on electronic bits; that is, on showing the “reality” of psychokinesis. Jacques Benveniste was excommunicated from the mainstream scientific community for his research on the memory of water, which has also been replicated.

The arrogance and authoritarian power behind mainstream science may not always be individual scientists, but also may be administrators and editors with an agenda. Conservative agendas may at times be demonstrated to be political, as in the case of CSICOP (Committee for the Scientific Investigation of Claims of the Paranormal), “which funded the journal *Skeptical Inquirer* and issued their own press releases, at times blurring the line between a seemingly objective scientific group and a self-interested lobbying group”⁹.

New Styles in Physics

Goldman argues from the historic record, noting a number highly respected physicists, including Earnst Mach and Joseph Fourier, who, although ignored by their peers, have argued that the job of science is NOT discovering “reality”, but rather finding useful outcomes or products as a result of the scientific experience.

Still, there would appear to be more options in scientific inquiry than either focusing on finding “reality” or developing “useful products”.

The results of the development of QM in the 1920s were too weird for these scientists to attribute to “reality”. The style of physics was based not only on mathematical formalism, but also on intense informal no-holds-barred discussion and speculation.

The style of the cold war scientific community, during the 1950s and 60s, was dictated by the situation; huge contracts worth millions of dollars from the military industrial complex, focused on finding “useful products”. This led to increased academic enrolments in physics and engineering, and a turn away from speculation into regimentation.

The FFG recognized the value of the informal approach practiced by the founders of QM, and recognized a “problem” with the “style” of mainstream physics, whose top down regimentation toward developing “useful products” persisted well beyond the end of the cold war military spending boom.

Kaiser argues that the style problem was addressed in the 1970s when the National Academy of Sciences convened a blue-ribbon panel, the Physics Survey Committee, to assess the damage of the cold war science bust and to plot a new course forward. Just as the FFG, the Committee was concerned about the direction physics had taken during the cold war boom years, and concluded that these boom years had exaggerated one among many legitimate styles in physics; that the pragmatism required for technological development had crowded out other important approaches.¹⁰

Kaiser points out that new privately funded centers, such as the Perimeter Institute of Toronto [founded 1999] have arisen to seek out and sustain the long shot efforts in physics, functionally acting as a kind of support group, as the FFG had.

He notes the “Foundational Questions Institute”, FQXi, an internet organization, whose stated goal is to “catalyze, support, and disseminate research on questions at the foundations of physics; particularly those that promise some “deep understanding of reality”, and the web-based physics pre-print server, arXiv.org.¹¹

However, despite mainstream science’s repeated failure to grasp or understand “reality”, it continues to maintain a very narrow view of just what that not-understood “reality” might be.

Goldman has argued that scientific knowledge is historical in character; constantly changing over time at every level: in the data, the analysis; the physical and conceptual tools used, the basic assumptions, and the theories. In the past, the hierarchical scientific community would decide on these changes, and they would indeed unfold in a temporal historical manner.

However, the internet has not only allowed long shot new ideas to get their mainstream peer review. It has also enabled an outpouring of alternatives to mainstream ideas in physics.

The *Natural Philosophy Alliance* (NPA)¹² was founded in 1992 in order to promote new ideas in the world of physics and cosmology. Members agree that the current state of physics and cosmology is a mess and needs lots of work including abandoning many mainstream ideas.¹³ The site homepage lists 292 members, 11637 abstracts, 187 books, 192 websites and 112 “media”.

The NPA links to the World Science Database¹⁴, “New Science for a New World”, which lists 2239 scientists, 5950 abstracts, 1390 books, 1188 websites, and 134 journals. Topics include relativity, gravity, ether, electric universe, expansion tectonics, Tesla, cosmology, new energy, structure, and unified theory. This database references NPA conferences.

The French *Jean de Climont*¹⁵ “is the pseudonym of the members of the Trust Jean de Climont Associates Ltd. The objectives of the Internet pages of the Trust is to present the members’ position with regard to philosophy of nature and philosophy of mind. Their dissident database¹⁶ notes 5010 dissidents and they publish a monthly dissident’s newspaper. The target science subjects include relativity theory and quantum mechanics. “The associated engineers developed an aether approach of gravitation and light. This approach is not Unified. The associated engineers don’t favoura unified knowledge of Universe. They rather adopt an opened, distinguished, diversified standpoint.” They reject the mathematical finality of science..... computerized modeling is considered a far more powerful means than pure mathematics. The website notes: Web address and a short summary of each of the 600 alternative paradigms found in the Internet are given in the list. A synthesis of the review of the related Web sites is given in book *The Failure of Pure Science*.¹⁷

It would be a mistake to dismiss this outpouring. Likely is the case that it largely represents Goldman’s idea of the constant changing of science at every level, but in this case not in a temporal sequence allowed by one “mainstream” authority, but simultaneously, as the power of the mainstream authority is diminished, in this case by various groups on the internet.

Does this outpouring necessarily mean chaos, or could this “parallel processing” of scientific ideas serve the analogous function of parallel processing in computation? Of course the main problem would be keeping up with what is happening in the mainstream and dissident groups, let alone developing some criterion for evaluating each group’s theories.

Some scientists have managed to hold their place within the mainstream, while embracing heretical positions. Elizabeth Rauscher, co-founder of the FFG, is a highly credentialed PhD physicist, has worked in both conventional and alternative physics. She has worked in fields as diverse as energetic healing, unified field theory, nuclear energy, and environmental pollution. She holds several patents, and has served as research consultant to NASA and the U.S. Navy, and congressional advisory committees.¹⁸ She is also listed in the World Science Database.

She has co-authored papers with controversial figures such as Nassam Heremein, a popular un-credentialed maverick who has his own geometric theory of the universe.¹⁹

Heremein is gaining credibility ground with his paper The Schwarzschild Proton, which has passed peer review and has now been published by the American Institute of Physics. This paper also received the "Best Paper Award" at the peer-reviewed CASYS '09 conference in Belgium.²⁰

Rauscher's association with Heremein highlights another emerging characteristic or style: a willingness to associate based on interest and capability, rather than on rank or title.

These new styles in doing physics; being less fettered by the mainstream, may amount to a revolution in the way science is done.

Challenging Einstein

No field of orthodox science is more hotly contested than Einstein's theories of relativity and the particle nature of the photon.

Jack Sarfatti defends Einstein's theories and interprets them in a new way.²¹

Einstein won the Nobel prize in 1921 for his theory that light had a particle nature as well as a wave nature, thus explaining the cause of the photoelectric effect. Subsequently it has been shown that that one can account for the photoelectric effect without using the concept of the photon as a minimum packet of light energy.²² Further, experiments have failed to demonstrate the existence of individual photons, but have shown that light seems to travel through space "bunched up". These results were confirmed in 1986, and launched an entirely new discipline, the explicit study of quantum nature of light.²³ "The central lesson of [this story] is that the concept of the photon is far more subtle than has been previously thought."²⁴

On relativity, an Amazon.com reviewer²⁵ notes: "In 1972 the famous British professor Herbert Dingle, an ex-relativist who turned into antirelativist, published a book against relativity titled: *Science at the Crossroads*. Because of that he was gradually removed from the "scientific" establishment. Kamen Kamenov's book is one of the books, alongside those of Herbert Dingle, Harald Nordenson and Henri Bergson, that are highly recommend[ed]"

A number of other writers have published material challenging Einstein's relativity.²⁶

Dr. Oleg Jefimenko's expansion, or generalization of Newton's gravitational theory represents a physical approach profoundly different from the time-space geometry approach of the Einstein model. In Jefimenko's opinion there is no objective reason for abandoning Newton's gravitational force field theory. His generalization is based on the existence of the second gravitational force field, the "cogravitational" or "Heaviside" field.²⁷

Takaaki Musha is a highly credentialed Japanese research engineer. He has published numerous articles in scientific and engineering journals. In addition to acoustics, his research interests include physics of faster-than-light (also known as superluminal) phenomena, anti-gravitational propulsion, and non-conventional energy sources..²⁸

New Paradigms in Life Sciences Now Being Acknowledged

The life sciences have been another flash point in the scientific community's internal science wars. Human energy fields and biophotons have been among the most maligned of heretical scientific concepts, yet are now becoming vindicated.

A quick survey of biophoton coverage in US, UK, and German newspapers shows that the topic has had little serious attention in the UK and US.

US newspaper references	UK newspaper references	German newspaper refs
New York Times: 1851-2004: 0	Guardian: 1 Jul 2003: The Truth About Oxygen	Die Welt: 3 Jan 2004: The mysterious light of fresh vegetables Dec 2000: Researchers learn from plants Oct 1997: Homeopathy for a dog
LA Times: 1985 -2004: 0	Independent: 0	Frankfurter Allgemeine: 1
Washington Post: 0	Telegraph: 0	Der Spiegel: 0

In the survey, the actual Die Welt articles were easily accessible online.

The yellow journalism topic of the UK Guardian article is "New Age bunkum"
The German articles in Die Welt represent responsible unprejudiced journalism

After years of scorn from various US sources, including top rated listings on quackbusters, in the 12/17/10 edition of Technology Review, Published by MIT, we find the words: "What's for sure is that biophotonics is one of the fastest moving and exciting fields in science today."²⁹

More examples to be added

¹ *Science wars: What scientists know and how they know it*
Steven Goldman; Teaching Company DVD
Lecture 1

² *How the Hippies Saved Physics* David Kaiser Norton 2011 p. xv

³ Goldman lecture 1

⁴ Goldman lecture 3

⁵ Goldman lecture 2

⁶ Goldman lecture 18

⁷ Goldman Lecture 18

⁸ Goldman lecture 18; see also: <http://mailstar.net/science.html> : *Dissident Science - no Big Bang, but an Eternal Universe*

⁹ Kaiser, p. xxx notes:

[Pinch and Collins (1984), 539 (“scientific-vigilante”); Hess (1993), 11-13; Rensberger (1976), 19; Dewar (1977), 11; and Gilliam (1978b)]

Pinch, Trevor and Harry Collins 1984 “Private science and public knowledge: The Committee for the Scientific Investigation of Claims of the Paranormal and its use of the literature.” *Social Studies of Science* 14: 521-46

¹⁰ Kaiser p. 275 f

¹¹ Kaiser p. 279 f.

¹² <http://www.worldnpa.org/site>

¹³ <http://www.worldnpa.org/site>:

“The Natural Philosophy Alliance (NPA) is devoted mainly to broad-ranging, fully open-minded criticism, at the most fundamental levels, of the often irrational and unrealistic doctrines of modern physics and cosmology; and to the ultimate replacement of these doctrines by much sounder ideas developed with full respect for evidence, logic, and objectivity. Such reforms have long been urgently needed; and yet there is no area of scholarship more stubbornly censorial, and more reluctant to reform itself.

Reigning paradigms in physics and cosmology have for many decades been protected from open challenge by extreme intolerance, excluding debate about the most crucial problems from major journals and meetings.”

¹⁴ <http://www.worldsci.org/php>

¹⁵ <http://perso.numericable.fr/jeandeclimont>

¹⁶ <http://perso.numericable.fr/jeandeclimont/JdeC%20Database%20%20XL%20Eng.htm>

¹⁷ <http://perso.numericable.fr/jeandeclimont/books/the%20failure%20of%20pure%20science.pdf>

¹⁸ [Science Digest May 1982 p. 88 f; Angels Don't Play This HAARP Earthpulse Press 1995 p 61]

¹⁹ <http://theresonanceproject.org/>

²⁰ <http://theresonanceproject.org/>

²¹ <http://knol.google.com/k/einstein-s-theories-of-relativity#>

²² 1969, Lamb and Scully http://www.universaltheory.org/html/basics/boundaries_evidences/boundaries1.htm

²³ 1956, Hansbury-Brown and Twiss

http://www.universalththeory.org/html/basics/boundaries_evidences/boundaries1.htm The original source of this material is: *The quantum challenge: modern research on the foundations of quantum mechanics*

George Greenstein, Arthur Zajonc 2006

²⁴ *The quantum challenge: modern research on the foundations of quantum mechanics*

George Greenstein, Arthur Zajonc 2006

²⁵ Review of the book *Space, Time, and Matter and the Falsity of Einstein's Theory of Relativity*

By George Kamenov, Vintage Press, New York 2000 Kamenov notes: "...NASA sent into space four satellites with gyroscopes to test the theory, project called 'Gravity Probe B'.... (4 years later) NASA [had still] not publish the results. Why?"

²⁶ Proof of the Falsity of Einstein's Theory of Relativity

Erik J. Lange

<http://www.physics.semantrium.com/relativity.html>

Questioning Einstein: Is Relativity Necessary?

by Tom Bethell Vales Lake Publishing 2005

Challenging Modern Physics: Questioning Einstein's Relativity Theories

By Al Kelly. Brown Walker Publishers 2005

The Einstein Myth and the Ives Papers: A Counter-Revolution in Physics [Paperback]

Edited by Dean Turner and Richard Hazelett. Hope Publishing 2005

Description:

This is a reprint of the 1980 edition originally published by Devin-Adair Publishers of Old Greenwich, CT. Turner and Hazelett have compiled the papers on the Ives' response to Einstein's theories. It is a monumental scientific work that shatters relativity theory and replaces it with a new, readily understood theory that is in conformity with all known phenomena. It restores logical clarity, common sense and realism to the study of space and time and opens the door to greater freedom of creative research, speculation, progress and practical discovery in the fields of physics and cosmology. The notes alone reveal startling, unexpected, little known facts that read like a mystery story.

A rebuttal to Ives' work:

How, then, did the idea arise that Einstein's 1905 derivation of mass-energy equivalence was a *petitio principii*? I suspect it may have originated with the American engineer and inventor Herbert Ives who, beginning around 1937, published a series of articles in "The Journal of the Optical Society of America", declaring the Einstein's special relativity was "not only ununderstandable, but contradicted by the facts". Ironically, one of Ives' experiments (performed with G. R. Stilwell) designed to discredit special relativity actually furnished the first direct measurement of time dilation, so it represented one of the strongest early confirmations of special relativity. <http://www.mathpages.com/home/kmath600/kmath600.htm>

²⁷ http://en.wikipedia.org/wiki/Oleg_D._Jefimenko

²⁸ From 1992 to 1996, he conducted experiments to confirm the Biefeld-Brown effect.... He also derived the formula to explain the electrogravitic effect from the weak-field approximation of Einstein's General Relativity Theory; a formula that was similar to the formula obtained by Boyko V.Ivanov, which was derived from the Weyl-Majumdar-Papapetrou solutions of the General Relativity Theory

<http://wikibin.org/articles/takaaki-musha.html>

²⁹ <http://trsub.com/blog/arxiv/26151/>