

Paraphysics on the Internet!

The Good, the Bad, and the Ugly

[as well as the ludicrous, misinformed, biased, sensational, down right bogus, and even the fantastic but true!]

An Editorial by James E. Beichler

While surfing the net the other day, I ran across an interesting web page: "The Paraphysics of Star Trek." Being a Star Trek fan (although not a Trekie) and an admirer of the whole genre of science fiction, as well as a physicist interested in paraphysics, I was intrigued by this title. So, I clicked on the link and shot off over the Internet's 'hyperspace' to land on Dr. G. Tenti's short page. The page consisted of a single paragraph describing an undergraduate mathematics seminar offered by the professor at the University of Waterloo. The good professor gave a definition of 'paraphysics' and then proceeded to give two 'paraphysical' examples from Star Trek.

Paraphysics is the study of natural phenomena outside the sphere of ordinary physics. For example, according to ordinary physics an explosion in vacuo makes no noise - but in Star Trek every such an explosion goes kaboom! Similarly, in ordinary physics nothing can be colder than absolute zero, which on the Celsius scale is about -273 degrees -- but the crew of the Enterprise once had to deal with an object at -295 Celsius! Besides learning about paraphysical phenomena, you will also get an overview of the course AM364: Subspace dynamics 6C 12T 0.5CR, which is entirely based on paraphysics (although it has AM261 as a prerequisite...)

Live long and prosper!

While this definition of 'paraphysics' is not untrue, it is certainly not as accurate nor as complete as the definitions given elsewhere, such as the definition (of 'paraphysical') in the *Oxford Dictionary of the English Language*.

According to Dr. Tenti's definition, 'paraphysics' deals strictly with "natural phenomena," which is essentially true. Natural phenomena are, literally, phenomena that occur in nature and the world around us. And therein lies the rub. The examples that he cites are phenomena that occur only in science fiction movies rather than either nature or reality. Yet Dr. Tenti has determined that they are 'paraphysical' in some manner, which represents a misuse of the term 'paraphysics' according to his own definition. In short, his examples contradict the definition that he has given. His examples are no more than common fictional devices and adaptations that moviemakers add to their product to either thrill the audience or help explain a plot, if not to earn them more money. Moviemakers do not need to heed the laws of nature, so their false portrayals of phenomena are not really part of 'paraphysics.'

In reality, sound does not travel through the vacuum of empty space, so there is nothing 'natural' about this fictional phenomenon. When the Captain and crew of the

Enterprise hear an explosion in outer space, they are not experiencing a 'paraphysical' phenomenon; they are experiencing the poetic license of the film's writers and producers. Everyone that follows science fiction knows that sound does not travel through empty space to make a "Kaboom," at least since the release of the movie "Aliens." If you cannot hear screams in the vacuum of space, you cannot hear anything. The intensity of the sound wave has nothing to do with the fact that there is no material in empty space to transmit the sound waves. Yet this is a common event in Star Trek as well as other science fiction movies. Even though this phenomenon is common to science fiction, that fact does not justify rendering these unreal and fictional phenomena 'paraphysical' in any sense of the word. There are even instances in Star Trek where sound does not travel through empty space. For example, in one adventure of Deep Space 9, the Dominion and their allies blow up the mines blocking the entrance to a wormhole in order to invade our quadrant of the galaxy. There is a flash from the explosion, but no sound of the explosion reaches Deep Space 9. Obviously, the authors of Star Trek Deep Space 9 are aware of the fact that sound traveling through empty space is not 'natural' and therefore not a subject of any legitimate branch of science, except for science fiction.

There are many other special effects that are utilized by movie producers, or rather, borrowed and adapted from real science and misused by moviemakers. Unlike sound, beams and waves of light can travel through the vacuum between the planets. However, the beams cannot be seen in empty space. So when the Enterprise fires her 'phasors' and the audience sees the light beam, they are witnessing a scientific impossibility. This particular corruption of physical reality is also common to many science fiction movies, but no one claims it is a 'natural phenomenon.' It is not part of normal physics or even 'paraphysical' in nature. In yet another adventure of Star Trek (Voyager), the crew discovers a natural source of element 142 on the periodic chart. At present, science has only discovered 109 to 112 elements. The exact number is in dispute since some of the latest elements have not yet been fully verified. Their half-lives are so short that it is difficult to either verify their existence or determine their physical and chemical properties.

Does this mean that an element with an atomic number in the 140s is impossible? No, it does not. Some scientists believe that as we create (or discover) elements with higher atomic numbers, we will eventually reach a plateau of stability. The higher numbered elements will have normal length lives. If that stability is reached, then it would be theoretically possible for those stable elements to exist in nature, although they would be quite rare. Good science fiction is either a believable extrapolation of present science that does not violate present physical laws or it is based upon the possibility that new laws of nature and theories will be discovered in the future. So, saying something is presently impossible does not mean that it will always be impossible, within certain limits. Dr. Tenti did not use these situations as examples, although the second is none-the-less an example of what is neither 'paraphysical' nor explained by present physics, but still scientifically feasible while being portrayed as fictional in the movies.

To have a temperature lower than absolute zero is non-scientific fictionalizing, given the present state of science. Therefore, it cannot be part of the present science of

'paraphysics' as Dr. Tenti claims. So, Dr. Tenti has again violated his own definition of 'paraphysics.' *If*, and that is a very big *if*, it would be discovered at some later date that a temperature below absolute zero was possible and our physics could not explain that observation, then perhaps 'paraphysics' could better explain the phenomenon. A few scientists have speculated on the existence of 'negative energy' that could possibly yield temperatures below absolute zero, but these are purely speculative notions. It is this possibility that the science fiction writers have utilized in this particular story. Until a temperature below absolute zero is actually observed in nature or the laboratory, it is neither a part of normal physics nor paranormal physics, *i.e.*, 'paraphysics.' So, temperatures below absolute zero are at present fictional, but not 'paraphysical' given Dr. Tenti's definition.

Three classes of fictional phenomena are used in science fiction according to their relationships to physics and/or 'paraphysics.' The first includes totally false phenomena such as sound heard in the vacuum of space and visible light beams. These phenomena belong to neither physics nor 'paraphysics.' The second class deals with extrapolations and speculations of present science. This group includes phenomena and objects which have not yet been observed, but whose existence is not specifically denied by present physical laws and theories. An element of higher atomic number than has yet been discovered is a good case in point. These may be fictional objects or phenomena, but they are definitely not 'paraphysical' in nature just because they are not specifically allowed by physics. There are some scientists who believe that anything that is not specifically denied by physics is possible. And finally, there are objects and phenomena which have neither been observed nor accounted for by the present theories and laws of physics, but may be explained and understood given either a 'physics' or 'paraphysics' of the future. Dr. Tenti's example of a temperature below zero Kelvins is a good example for this category. It may prove to be 'paraphysical' or it may be 'physical' according to our 'physics' of the future, but that fact cannot yet be determined.

Granted, science fiction utilizes bad science and sometimes even false science, but we expect that when we call it science 'fiction.' The fact that writers, movie producers, directors and special effects artists twist reality, the laws of nature and accepted physical theories to their own benefit does not make it necessary to disparage the science of 'paraphysics' by associating it with what is not, nor cannot be real. 'Paraphysics' is not science fiction, nor is it bad science, nor false science. 'Paraphysics' should not be equated to scientifically impossible phenomena, an act which is insulting to the few scientists who work in the academic field of 'paraphysics.' It can only be hoped that Dr. Tenti's seminar was more realistic than his Internet description of that seminar.

I do not wish to imply by my criticisms that Dr. Tenti's seminar is not valuable. I only wish to point out that his examples are not the best that he could have chosen to exemplify 'paraphysics.' I admire Dr. Tenti for offering such a seminar at the college level and advertising it to the whole world by way of the Internet. In fact, I wish he had offered a better description on his home page. I think that science fiction is a wonderful platform for teaching and popularizing real science. But I suggest that anyone comparing science fiction to real science be extremely careful not to misrepresent real science. There

exists a potential for misleading people who cannot choose between science fiction and science fact for themselves, especially those who depend on scholars like Dr. Tenti for information regarding science. A strict line must be drawn between the two, even while they are being compared. I hope that we will all hear more from Dr. Tenti in the future.

However, a larger problem looms behind this one page on the Internet. There is a lot of good science out there in 'hyperspace,' just as there is a lot of interesting and fantastic information that is essentially true, but there is also a lot of misinformation and facts that are simply bogus. So, how does one distinguish what is correct from what is not, and then distinguish those from what is merely entertainment? It takes a lot of time, effort and at least enough knowledge so that a person will not be duped by false claims.

For instance, a keyword search on the term 'paraphysics' yields rather interesting results. Several search engines were used and their results tabulated.

Hotbot	183
Alta Vista	116 Documents
Looksmart	116 (Powered by Alta Vista)
Infoseek	80
Snap!	80 (Powered by Infoseek)
Excite	79
AOL NetFind	79 (Powered by Excite)
Lycos	21
Webcrawler	14
Electric Library	0
Yahoo!	1

By the normal standards of the Internet, these are very low numbers and reflect how little is known about 'paraphysics.' A search on the keyword 'parapsychology,' the mental twin of paraphysics, would result in thousands of hits while individual subjects such as 'ESP' and 'ghosts' would possibly result in tens of thousands of hits, if not more. These results merely reflect the fact that 'paraphysics' is not yet as well known or as well accepted as 'parapsychology.' The numbers are constantly changing since the search engines are often updated. Results of a search conducted in the next month, or even as little as a day or two, may differ from those above. In spite of the differences in character and quantity in these searches, there still seems to be a great deal of variation in the context of the results, depending on how each search engine gathers its data. For example, Yahoo is interested in entertainment, so it would not be expected to have as many citations for a scientific subject. These Internet services represent the first place an interested novice would look to obtain information on 'paraphysics' or any other subject, but other search methods should also be utilized for a more thorough search of a subject.

If you check the individual results of a search and find an entry that is interesting, it is best to bookmark the entry because it may disappear from future searches. The search engines sometimes drop entries that prove unpopular, become outdated or are deleted from the Internet altogether. It is even better to download the article for future

reference since the page can disappear from the Internet itself at any time. Articles and pages also change their locations on the Internet quite often since their authors and publishers change Internet providers. This also makes it difficult to find pages a second, third, or later time. But no one should expect all of the citations listed in a search to be relevant. Search engines list pages under the keyword 'paraphysics' which need be no more than pages on which the word 'paraphysics' appears in any context. Some of the pages listed may actually have nothing to do with the subject of 'paraphysics.' This is not the fault of the Internet services. It should not be expected that they would evaluate the subject material. They are only interested in searching for keywords on the pages, thus allowing their customers the freedom to make their own choices regarding content. A few of the services do a better job at content than others, but it is still the choice of surfers and researchers to choose their own references from the lists. There are still plenty of citations in these lists that offer excellent information about the science of 'paraphysics,' so it is necessary to verify all the entries on any list, and this is where a prior knowledge of the subject comes in handy.

Dr. Tenti's page is the first entry on Infoseek's present list, which seems to imply that it is the 'best' source for 'paraphysics.' The position of a page or document on a search engine's list has nothing to do with the quantity or quality of information on that page. This e-journal is listed by several search engines, but not by all of them even though the *Yggdrasil* is the only publication dedicated completely to the science of 'paraphysics.' There are, however, several other excellent e-journals whose scope overlaps 'paraphysics.' Some of these e-journals are listed below. Alta Vista even lists separate articles that have appeared in the *Yggdrasil*, while Excite includes a site with "Basic Research Links" provided by the Center for Frontier Science merely because it contains a hyperlink to this journal. Fortunately, the Center for Frontier Science is an excellent resource for other articles and information dealing with 'paraphysics' and related issues in science, so it is actually quite appropriate that it has been listed under 'paraphysics.' On the other hand, several of the search engines include an article titled "Schematic differences between modernism and postmodernism" even though this page has nothing to do with the science of 'paraphysics.' Excite even lists "Lyrics" from KUKL's album "The eye" and "Lovesphere," a 36 hour musical for the millennium. What these have to do with the science of 'paraphysics' presents an interesting question which any individual reader is welcome to explore on his or her own.

It would certainly seem that anyone wishing to find information regarding the science of 'paraphysics' must learn to discern the good from the bad and ridiculous when surfing the net and world wide web. There are good sites on the net and web that can be found through these search engines as well as other means. The Obscure Research Lab is listed in many places; although it is uncertain whether this is a real laboratory dedicated to scientific research or a 'tongue in cheek' attempt to spoof all the various sciences that deal with the paranormal. It seems to be the latter, but still has some heuristic value. Papers by Brian Josephson, Edwin May, James Spottiswoode, Jack Sarfatti, Vic Mansfield and Wilbur Franklin, among others, can also be found on these lists. These are all respectable scientists who are attempting to explain paranormal phenomena within the scientific perspective of physics and paraphysics.

On top of all this, a search on the word 'paraphysics' alone will not suffice to cover the material available on the net. This particular journal covers a much broader area of science under the umbrella term of 'paraphysics' than a simple definition might imply. Physics can be defined as a logical study of nature, made by observing the phenomena and events that constitute our world. Physics explains these phenomena by reducing them to their simplest common elements, the fundamental quantities of matter in motion against the normal background of space and time. On the other hand, 'paraphysics' should be considered either of two things. 'Paraphysics' is the physics of paranormal phenomena, or natural phenomena that go 'beyond' normal human perception. Such 'paraphysical' phenomena are both natural and paranormal at the same time since many natural phenomena occur 'beyond' human perception, even when modern technological devices extend that perception. But 'paraphysics' should also be considered attempts to logically explain both normal and paranormal phenomena that occur in nature in terms other than the fundamental concept of matter in motion. For example, a physical theory that attempts to reduce either matter, motion or both to a more fundamental property or quantity would go 'beyond' what we normally regard as physics and therefore be 'paraphysical.'

This idea is not so far-fetched. There have been, and still are, attempts to describe physical reality as a product of thought, consciousness, or both. So some forms of mysticism and similar methods of knowing and understanding our world can also be included as 'paraphysical' in nature. There are also legitimate theories that posit space-time curvature in higher dimensions as the true physical reality while matter and motion are only our perceptions of that curvature. Such theories would fall within the realm of 'paraphysics' because they dispense with the 'normal' physics of matter in motion. In other words, we 'normally' sense matter in motion directly, but we are not directly aware of, nor do we normally sense space-time curvature or its variations.

In the case of consciousness, this is especially true. Modern quantum theory can only go so far toward explaining consciousness and its relation to physical reality. In the end, all that quantum theory can describe with absolute certainty (if anything can be absolutely certain in quantum mechanics or even science) is that the action of consciousness is either a necessary condition for the 'collapse of the wave packet' or just another ingredient in the 'collapse of the wave packet.' In either case, attempts to explain consciousness by its interactions with the physical world or as an underlying reality of the physical world, by reducing consciousness to a physical quantity or variable, would go 'beyond' the common definition of physics and thus into the realm of 'paraphysics.' These ideas open a whole new vista for exploring 'paraphysics' on the WWW and Internet. A proper search of the subject should therefore include searching the keywords consciousness, consciousness+physics, "unified field theory," mysticism+physics, "curved space-time," and many other similar terms. In many cases, academic and other related subjects, which are considered 'paraphysical' by this author and others in the field of 'paraphysics,' could also be listed under normal physics. So a search of physics lists for specific topics, for example space-time, "space-time curvature" and hyperspace, would also be necessary in order to find legitimate sources on these subjects. Then, of

course, a search of individual physical (paranormal) phenomena, such as PK, ESP and remote viewing, should also be conducted.

Many other resources are available on the net, but might prove harder to find. Below is a list of a few of those resources with hyperlinks. The citations below include most of the better links listed in the above searches, with a few more added that were not found on those lists. This list is by no means complete. So, anyone with knowledge of a good site is asked to forward that information so the site can be added to this list. Updates will appear in future issues of the *Yggdrasil*.

Dr. Tenti's page on [The Paraphysics of Star Trek](#)

Other journals that deal (at least in part) with paraphysics

[The Journal of Scientific Exploration](#)

[Subtle Energies Journal](#)

[The Electronic Journal for Anomalous Phenomena](#)

[P&P - Physics and Psi](#)

[PSYCHE: an interdisciplinary journal of research on consciousness](#)

[The Journal of Ideas](#)

[The Journal of Consciousness Studies](#)

Research Projects, Labs and Conferences that deal with paraphysics or parapsychical subjects

[DMILS: Direct Mental Interactions with Living Systems](#)

[Mind-Matter Unification Project](#) (Brian Josephson at the Cavendish Lab, Cambridge, UK)

[The RetroPsychoKinesis Project](#) (University of Kent at Canterbury, UK)

[Society for Scientific Exploration](#)

[Princeton Engineering Anomalies Research \(PEAR\)](#)

[Cognitive Sciences Laboratory](#)

[The Center for Frontier Sciences](#) (Temple University), the Center's [Basic Research Links](#) offers a good starting point for further searches about paraphysics and related subjects.

[Association for the Scientific Study of Consciousness](#)

[Physics of Consciousness Research Group](#)

[The Institute for New Energy](#)

[Obscure Research Laboratory](#)

[GGEEPP: Les WEB de la Parapsychologie](#)

[The Science and Medical Network](#)

[The Intuition Network](#) has discussion groups on the web which include some of the top people conducting parapsychical research.

[Tuscon II](#) Conference on Consciousness, "Toward a Science of Consciousness 1996" especially the section on [Physics and Mathematics](#)

Conference on Consciousness at Elsinore, ["Toward a Science of Consciousness 1997"](#)

[Tucson III](#) Conference on Consciousness, "Toward a Science of Consciousness 1998," especially the section [Physical and Biological Sciences](#)

There are several parapsychology labs that conduct research in paraphysics. These can be found on the parapsychology resource lists cited below.

Important Physics and related sources that contain links to parapsychical subjects

[Physics around the world](#)

[TIPTOP: The Internet Pilot to Physics](#), with specific articles listed through [The Net Advance of Physics](#)

[Hopkins Philosophy Pages](#)

[PhysLINK: The Ultimate Physics Resource](#), see [New Theories in Physics](#) for articles on topics in advanced physics

[Quantum-d](#)

[What's New and Cool Links](#), a real grab-bag of links, which has some good links to advanced physical and paraphysical subjects.

[JSE Links](#)

Personal home pages and similar links for paraphysics and paraphysical subjects

Brian Josephson's [Information about Parapsychology](#) page.

Vic Mansfield's [Home Page](#)

Jack Sarfatti's [Vanity Home Page](#)

Sergio Frasca's [Home Page](#)

[Home Page](#) for Michio Kaku

[HYPER HYPER! Ms. Guidance to Xtra Dimensions](#)

[New and Alternative Theories of Physics](#) by Phil Gibbs [This is an excellent, if not the best, resource for new and controversial theories in physics]

[The Interscience Review](#), published by Joel Henkel

Articles that fall within the scope of paraphysics as set forth in the *Yggdrasil*

Edwin May's commentary on the [DOD StarGate Program](#)

[What's DAT all about?](#) by Doctor Why [Jack Sarfatti?]

[UFOs and Mainstream Science](#) by Bernard Haisch

[Metal Fracture Physics Using Scanning Electron Microscopy and the Theory of Teleneural Interactions](#) by Wilbur Franklin

Papers on [Dualism: Mind-Body Interaction](#) by John Beloff, in particular [Could There be a Physical Explanation for Psi?](#)

IBM announces [Quantum Teleportation](#)

[CIA Initiated RV Program at SRI](#), by Hal Puthoff

[Quantum Quackery](#), commentary by Jack Sarfatti

[EPR](#)

[PK Effect on Pre-Recorded Targets](#) by Helmut Schmidt

[Comparison of PK Action on Two Different Random Number Generators](#) by Helmut Schmidt

A series of papers appearing in Volume 2 of *Psyche*, dedicated to Roger Penrose's book *Shadows of the Mind*:

..... [Can Physics Provide a Theory of Consciousness?](#) by Bernard J. Baars

..... [Is Quantum Mechanics relevant to understanding consciousness?](#) by Stanley Klein

..... [Roger Penrose's Gravitonic Brains](#) by Hans Moravec

..... [Awareness and Understanding in Computer Programs](#) by John McCarthy

..... [Beyond the Doubting of a Shadow](#) by Roger Penrose

[Why Classical Mechanics Cannot Naturally Accommodate Consciousness but Quantum Mechanics Can](#) by Henry Stapp

[Why the Difference between Quantum and Classical Mechanics is Irrelevant to the Mind/Body Problem](#) by Kirk Ludwig

[On the End of the Quantum Mechanical Romance](#) by Gregory R. Mulhauser

[Contemporary Philosophy of Mind: An Annotated Bibliography](#) by David J. Chalmers

[Miracles of the Mind](#) by Russell Targ and Jane Katra

[Jung, ESP and Physics](#) by Vic Mansfield

[Hyperspace FAQs](#) by Michio Kaku

Important sites for parapsychology which have some paraphysics content

[PARAPSYCHOLOGY FAQ 1](#)

[PARAPSYCHOLOGY FAQ 2](#)

[PARAPSYCHOLOGY FAQ 3](#)

Resource sites for parapsychology and the paranormal

[Explore Parapsychology](#), by Michael Daniels

[Parapsychology Sources on the Internet](#), by Fiona Steinkamp

[Parapsychology Sources](#)

[Mike Levin's Parapsychology/Fringe Science Page](#)

[Parapsychology, Psychokinesis, and Scientific Information](#)

[Yahoo! - Science: Alternative: Paranormal Phenomena](#)

David Kortenkamp's [Home Page](#), especially his Bibliography on [Consciousness/Parapsychology/Transpersonal Psychology](#)

Parapsychology labs, organizations and journals are listed separately on the above resources lists.

Direct information on parapsychology is not included in this list although there is a great deal of interaction between paraphysics and parapsychology. These two sciences are "fraternal twins," one covering mind and the other one covering the body portion of the mind/matter dichotomy.

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