

Pseudoscience on Wikipedia

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13 January 2008



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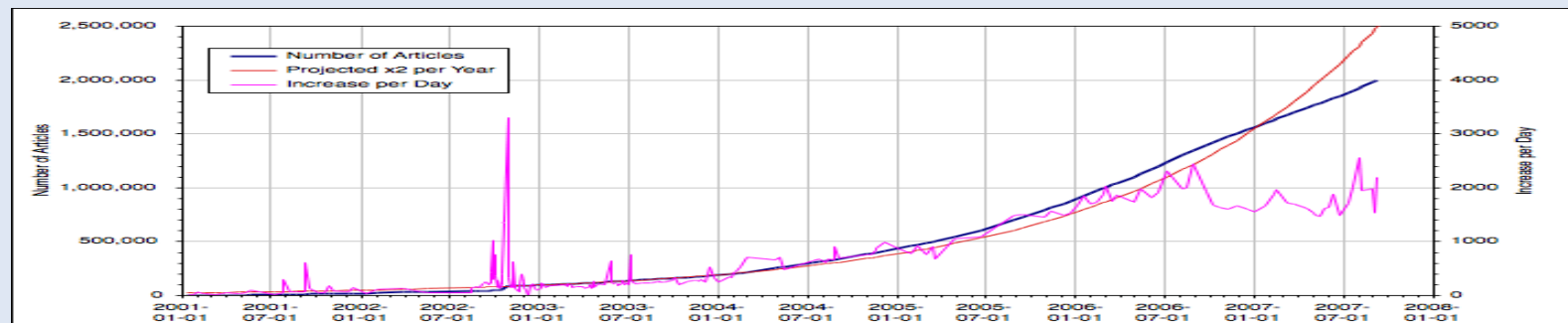
Wikipedia

- “The open source encyclopedia that anyone can edit.”
- Most popular on-line encyclopedia/reference site.
- Most articles appear in google top-ten search results.

The screenshot shows the Wikipedia homepage. At the top, the word "WIKIPEDIA" is displayed in a large, bold, serif font. Below it, a globe is surrounded by text in various languages, including English, Deutsch, Français, Italiano, Español, Svenska, Polski, and Nederlands. Each language entry includes the name of the encyclopedia in that language and the number of articles. For example, English is listed as "The Free Encyclopedia" with 2,124,000+ articles. Below the globe is a search bar with the text "search" and "English" selected. At the bottom, there is a grid of language links, with "Deutsch" and "English" being the most prominent. The grid also includes links for "100 000+", "1 000+", and "100" articles.

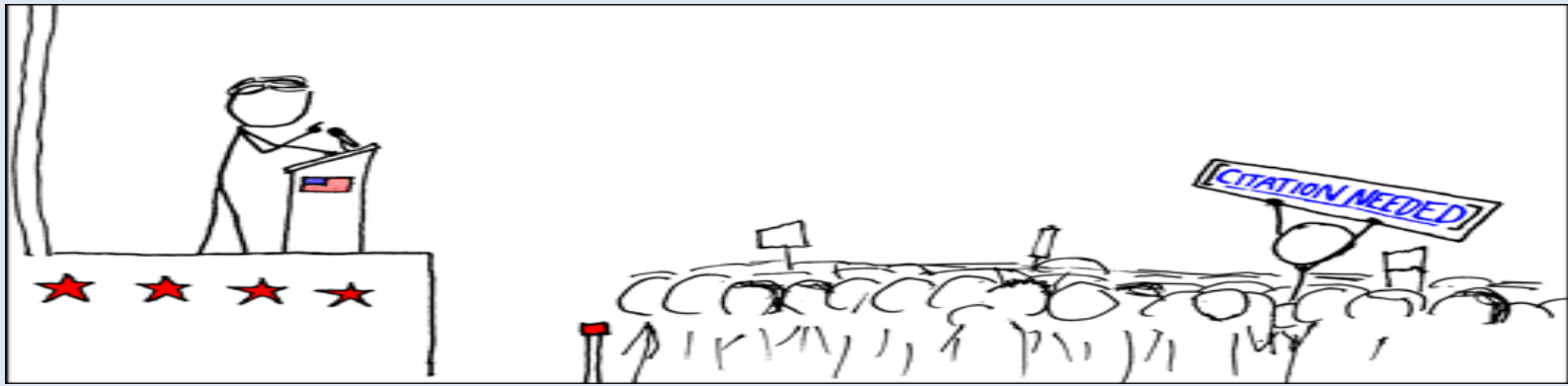
What's good about Wikipedia?

- It's free.
- It's efficient, hyperlinked, and expansive.
- *Nature* reports Wikipedia "as accurate" in science articles as *Encyclopedia Britannica* (!)
- In principle, real-time fixing of problems/ updating of articles.



What's bad about Wikipedia?

- Petty vandalism.
- "Wikiality".
- Obscure and cumbersome editing procedures.
- Anti-elitism/anonymous editing.
- Pseudoscience and undue accommodation of fringe ideas.



Why should we care?

- High visibility!
- Students use Wikipedia.
- There is currently no other one-stop resource at all levels from popular to technical.
- There are those who would promote pseudoscience and fringe theories on Wikipedia as fact.

Wikipedia ideas

- Neutral point of view (NPOV). Prevents unequivocal statements from being made in articles (sometimes to absurd degrees)
 - Undue weight clause: minority opinions are marginalized/eliminated relative to their prominence.
- Sourcing and research:
 - No original research (NOR)
 - Verifiability, reliability, and attribution
- Fringe guideline

What is pseudoscience?

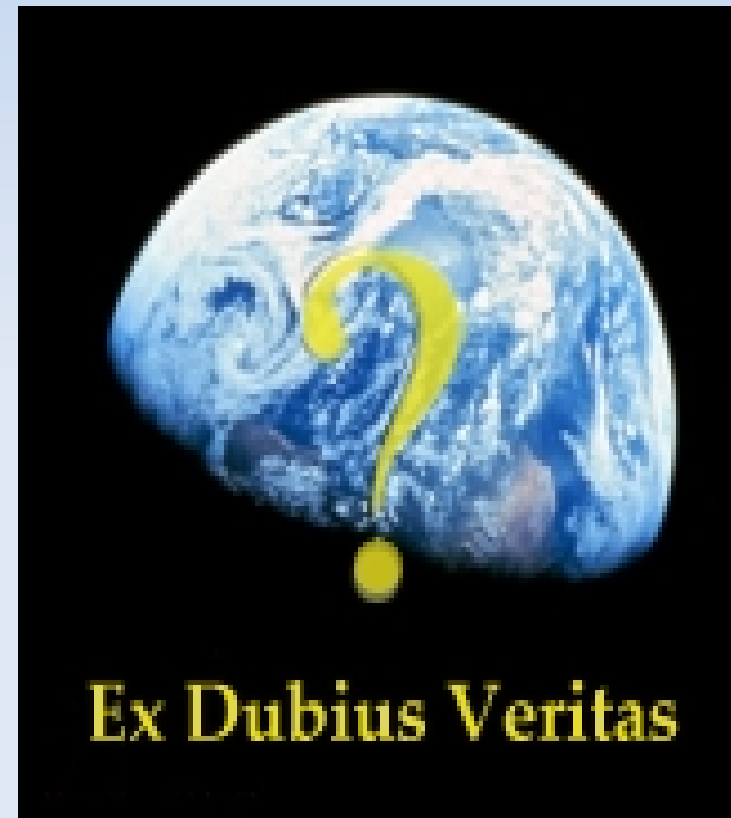
- Generally used as a concept in introductory non-major science courses to discuss extensively-developed ideas that are not part of the scientific mainstream.
- Demarcation of science/pseudoscience proceeds along sourced consensus lines.
 - Skeptics “debunk” pseudoscience.
 - Wikipedia “reports” pseudoscience.

Who are pseudoscience POV-pushers?

- Religious-based
 - Creationism
 - Faith healers
 - Miracle workers
 - Pseudopsychology
- Conspiracy theories
 - UFOs
 - Black helicopters
 - Faked moon landing
 - Fluoridation paranoia
 - AIDS reappraisal
 - 911-Truth
- Spontaneous human combustion
- Alternative historians
 - Velikovsky/Sitchin/Von Daniken
 - Racial theorists
 - Holocaust denial
- Alternative medicine
 - Homeopathy
 - Vitalism
 - Acupuncture
 - Reflexology
 - Bioenergy (Qi)
 - Magnetic therapy
 - EMF paranoia
- Autodidact theorists
 - Theories of everything
 - Crankism (X is wrong!)
- Spiritualism/Paranormal
 - Astrology
 - ESP
 - Crystals/pyramid power
 - Quantum mysticism
 - Matter-spirit interaction
 - Psychic communication
- Cryptozoology
- Numerology
- Amateur inventors
 - Free energy/cold fusion
 - Perpetual motion
 - Tesla enthusiasts

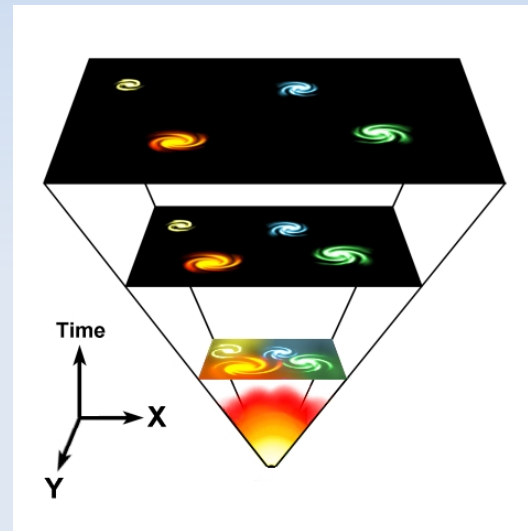
Resources

- Article talk pages
- WikiProject:Rational skepticism.
- Fringe theories noticeboard
- Deletion requests
- Dispute resolution



Case study: Big Bang

- Mid 2004, article was riddled with criticisms:
 - creationism
 - Halton Arp
 - QSS
 - Plasma cosmology
- By 2005, with the help of two or three other astronomers, Big Bang was a "featured article".



Case study: Big bang

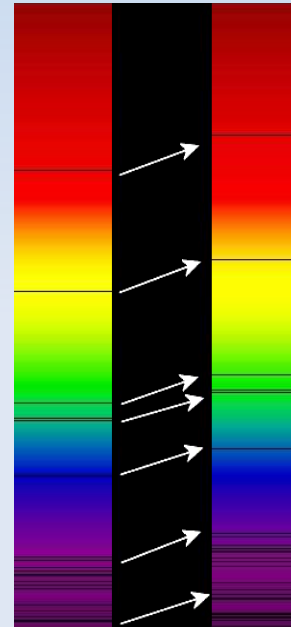
Comments from disgruntled Wikipedian:

- "The article is not NPOV, not historically or factually accurate, and attempts to portray a theory as uncontested scientific fact."
- "Those who know better have been unable to change the article to a more NPOV position due to constant reverts by Big Bang proponents."
- "The unknowing public could come across this page and be completely misinformed and misled about the ongoing controversy surrounding the topic."
- "Getting the article Featured in the first place was no doubt a ploy from an article proponent to further remove attempts to contest the factual accuracy of the article."
- "Failure to remove the featured status of this article will only result in continued decline of the quality and accuracy of the article."

Case study: Redshift

- Early 2005: seven different causes of redshift:

- **Doppler effect**
- **Space expansion**
- **Gravity**
- *Intrinsic redshifts*
- *Tired light*
- *Raman scattering*
- *Wolf effect*



- From Stephen Serjeant: "One of the disadvantages of wikipedia is that a vocal naysaying minority can cause a lot of confusion, and has led to other articles on scientific topics having their neutrality disputed.... The solution I've preferred up to now is to give the naysayers a medium for expression in this section, while still explaining that it is not supported by the overwhelming majority of the scientific community."

Case study: Redshift

- After wasting megabytes worth of text, the article is now "featured".
- Three normal causes dominate (WEIGHT)
- All "alternative ideas" relegated to a footnote. (WEIGHT)

34. [^] When cosmological redshifts were first discovered, [Fritz Zwicky](#) proposed an effect known as [tired light](#). While usually considered for historical interests, it is sometimes, along with [intrinsic redshift](#) suggestions, utilized by [nonstandard cosmologies](#). In 1981, H. J. Rebolus summarised many [alternative redshift mechanisms](#) [↗] that had been discussed in the literature since the 1930s. In 2001, [Geoffrey Burbidge](#) remarked in a [review](#) [↗] that the wider astronomical community has marginalized such discussions since the 1960s. Burbidge and [Halton Arp](#), while investigating the mystery of [the nature of quasars](#), tried to develop alternative redshift mechanisms, and very few of their fellow scientists acknowledged let alone accepted their work.

Case study: Electric Universe

- Obscure, Velikovskian-based pseudoscientific belief:
 - Astrophysicists don't understand plasma physics
 - Electricity dominates over gravity
 - Most of modern astrophysics is a myth including cosmology, celestial mechanics, planetary science, and fusion-powered stars.
- Page was deleted after two years of bickering due to lack of notability.

Concluding Quandries

- The Wikipedia community needs to decide whether it is going to provide reliably vetted articles or if it will accommodate those pseudoscience POV-pushers who have the motivation to promote their ideas nearly full time.
- SPOV was abandoned, but was it because NPOV is sufficient or because SPOV does not completely describe physical reality?
- Does mainstream academia own the subjects it studies?
- What is the role of amateur speculation?