

“What the Bleep Do We Know?” – A Review

Sketchy Science and Sketchier Mystics

bob mccue
November 6, 2004

<http://mccue.cc/bob/spirituality.htm>

Table of Contents

Introduction	1
Conceptual Overview	1
The Good	3
The Bad	5
The Ugly	7
Conclusion	10

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Reality is merely an illusion, although a very persistent one. Albert Einstein

Introduction

I just returned from "What the Bleep Do We Know?" and am disappointed. While I learned a few useful things and was reminded of a few more, my dominant feeling is that I was tricked into subjecting myself to an exercise in propaganda on a scale comparable to many Mormon Church produced films I have seen. That is, a person who does not know quite a bit about the subject matter in question could reasonably draw a set of potentially influential and deeply misleading conclusions from that movie. And in fact, it seems clear that the intent of those who produced the movie was to cause precisely that.

And "What the Bleep" is not good art in my view (See <http://mccue.cc/bob/documents/rs.creativity.pdf>). The ironies and paradoxes it suggests are likely false, and hence unpersuasive to those armed with even the modicum of scientific knowledge I have. However, I am not a scientist, and so stand willing to be corrected by those who know more about the relevant fields than I do.

Most of the ideas below were compiled during the movie and before I read other people's reviews. I have only seen the movie once and have not read the script, so I likely have some of the details wrong. So for what they are worth, here are my thoughts in the following categories: Conceptual Overview; The Good; The Bad; and The Ugly.

Conceptual Overview

The basics have been summarized by many before me, and so I will save myself some typing time (See <http://www.santacruzsentinel.com/archive/2004/September/24/style/stories/03style.htm>):

"[What the Bleep? is] ... a hybrid of documentary crossed with melodrama. Marlee Matlin stars as an unhappy, divorced photographer wandering the streets of Portland who stumbles into a mind-bending Alice-in-Wonderland

adventure. Her journey from mopey singleton to inspired human is intercut with documentary interviews with scientists sporting academic credits up the wazoo waxing eloquent on such matters as alternate reality, neuro-networks, and, as one interviewee puts it, "the wacky, weird world of quantum particles." The nature of God makes an appearance from time to time.

These concepts are applied to all manners of human suffering from addictions to heartbreak, and to the nature of the human condition from creativity to sexual attraction.

The most fascinating section of the film is a wedding sequence, or, more specifically, the reception where the gloves come off and various family members and friends display their less attractive sides. Marlee's character, Amanda, is sent on assignment to photograph the event, much against her wishes, for her own ill-fated wedding took place in the same church. Through the wonders of computer animation, the biochemical responses of all involved get out on the dance floor to wreak havoc.

For better or worse, among the interviewees whose credits range from credible Stanford physics professors and eminent neurologists is an interview with the sketchy Ramtha, a "spiritual teacher" from 35,000 years ago channeled by a contemporary American woman. The dramatized section is marred by the presence of Amanda's roommate Jennifer (Elaine Hendrix), the kind of ever-smiling ditz that gives New Age philosophy a bad rep."

"What the Bleep" uses some credible, mainstream scientists and other fringe scientists (See http://en.wikipedia.org/wiki/What_the_Bleep_Do_We_Know%3F!) to summarize some science I believe to be solid, much other science that I believe not to be solid, and to often speculate in an unscientific way. And, it does not give any sense of where the scientists whose views it showcases appear within the spectrum of scientific thought on the subjects relevant to the film. No alternative views are presented. And no indication is given of what percentage of the reputable scientists working in the relevant fields would support the views the film puts forward as "science".

"What the Bleep" then goes from bad to worse by turning to three mystics to blow what the scientists said into the stratosphere for the purpose of promoting a particular type of religious, and ironically, anti-scientific agenda. I think it is fair to call this film anti-scientific because it makes an extreme postmodern use of quantum physics that has been rejected by the mainstream of the scientific community for decades (See for example, Peter Godfrey-Smith, "Theory and Reality - An Introduction to the Philosophy of Science" or <http://www.thoughtware.com.au/philosophy/philref/PHILOS.04.html>) not to mention the common sense experience of most people. That is, this film would have us believe that the mind-body connection is far more powerful than it has been shown by science to be and that we should put our faith in pseudoscience instead of science. This is the equivalent, in my view, of using "science" to argue that the earth is between 6,000 and 10,000 years old or that the Holocaust did not happen.

The mystics are a woman named JZ Knight, the leader of a New Agey cult (See <http://skepdic.com/channel.html> for the con and <http://www.ramtha.com/html/aboutus/about-jz.stm> for the pro), and a couple of her followers - a chiropractor and a former Catholic priest. Given what I have read about what Knight has done, I suggest that she is a charismatic figure similar in nature to Joseph Smith in that she has a great sense of the kind of story that will sell in a particular market and has the chutzpah to tell it with gusto if not skill. And we were treated to the most persuasive version of that story she could muster in "What the Bleep".

As Joseph Campbell has noted, most humans need mythologies to help make sense out of life. Most mythologies tell us what we want to hear, and to be accepted they must make sense in light of the mainstream beliefs within society at the time and in the place they are told. Hence we should not be surprised at the resort to quantum physics and the attempt to borrow the credibility of respected scientists by using their words as the launching pad for a brand of mysticism that Ms. Knight and others like her have long used.

I agree with a lot of what the former priest had to say about institutional religion in general. I disagree with him when he ventures into his mystic alternatives to institutional religion (although I must confess that I can't remember the details in this regard). And I found the chiropractor positively offensive. He hopped with dizzying frequency back and forth over the science v. mysticism line. I note that this is a common practice of many of the chiropractors with whom I have dealt. Far too many of them in my experience use a combination of science and mysticism as their means to both hook and bring patients back, and this has given their profession a justifiably bad name. I hasten to add that many other chiropractors I know try hard to stick to science, but the nature of their profession makes this difficult for even the most professional and well intended among them.

In the end, this film is neither good art nor educational. It is the very kind of propaganda I have come to detest as a result of my experience with Mormonism.

The Good

"What the Bleep" summarizes some science in a useful way. For example, I have read Andrew Newberg's book "Why God Won't Go Away" with regard to the neurology of meditative epiphanies and related matters, as well as a lot of other things related to that topic. His research, if not the conclusions he draws from it, is useful. For example, his main point is that the brain functions during meditative epiphanies in a way that is consistent with that those who experience these mental states report. They say that they have experienced a "union with all" or something of that nature. And Newberg indicates that the part of the brain responsible for our sense of self, or separateness, shuts down at about the same point during the deep meditative process as this experience is reported. He suggests that this state of "unitary being" may be a more "real" state than ordinary consciousness. I do not accept that conclusion. But, I believe that he has "unwoven" a good part of the rainbow (See Richard Dawkins, "Unweaving the Rainbow") related to the experience reported by mystics of all times and faiths (See Karen Armstrong, "The History of

God"). The interesting question that arises from Newberg's work, from my point of view, is why the experience of losing the sense of self seems so attractive to human beings (See <http://mccue.cc/bob/documents/rs.camp%20caroline.pdf> starting at p. 5).

Stuart Hameroff of The University of Arizona is a cutting edge, if controversial, figure in the branch of neurology that deals with quantum mechanics and consciousness. His views, while considered interesting and taken seriously, are in the minority.

Hameroff (with the help of Sir Roger Penrose) finds in quantum physics reasons to suggest that humans choose their own actions. Many philosophers take the position that our futures are determined, and it is only our ignorance of the mechanics involved that gives us the illusion of free will. Most ordinary folk have no patience for this debate, in which Hameroff spends much of his time, and do not need quantum physics to support the idea that we actually do make choices. The best philosophy (from my point of view) that is well grounded in mainstream neurology (Hameroff is far from the mainstream) explains the existence of free will in terms that make sense to me (See for example Daniel Dennett's "Freedom Evolves"). In my view, we don't need quantum physics in this regard, and in this I agree with the vast majority of scientists.

I have read quite a bit about Hameroff's research, and while I find it fascinating, I do not buy his conclusions. He may be right, but at this point the evidence goes against him. And in any event, his views (as far as I understand them) do not support anything like the claims the movie makes. I doubt that he is happy with his association with "What the Bleep".

I thought some of what the chiropractor had to say about microbiology and how our emotions work was helpful. But because of how badly quantum physics was abused in the movie, I do not accept anything he said that does not already agree with my understanding of the processes in question. I would love to hear an analysis of that aspect of the film from someone well versed in microbiology. For example, I am skeptical of his claim of the degree to which the various protein receptors in our cells evolve in light of prior experience to lock us into either positive or negative behavioural cycles. That does not accord with my experience but I do not know anything about the science that is relevant to this point.

I thought aspects of the graphic representation of microbiology in the film were good. They helped me to visualize certain systems that I had not conceptualized before. I would say the same thing about the explanation of how "brain re-wiring" works. It was consistent with my understanding of this topic, and I have been saying for at least the past two years that much of my reading, writing etc. was a conscious attempt to re-wire my own head. The film's graphic representation of the "re-wiring" process and other aspects of brain function was, I thought, outstanding.

I agreed with the film's suggestion that it is the height of arrogance to make God in our own images, which is what traditional religions tend to do. As Goethe insightfully put it,

As man is; So is his God; And thus is God; Oft strangely odd

But does this not apply to New Age religions such as that pimped by "What the Bleep?" It has been noted that never before in human history has so large a percentage of any group perceived itself as so individually powerful as now do the citizens of the countries that comprise the democratic west. And what do New Age religions tell us? You are gods; you can create by choice your own worlds; your potential and power are unlimited; etc. I would say that Goethe is as right now as he ever was, and would use "What the Bleep" as exhibit one, with "The Matrix" as exhibit two to support my position. And I would say about both that the ideas they present are wonderful in metaphor, and killers if taken literally.

I liked the film's emphasis on questioning our basic beliefs and its emphasis on personal choice and how much we may have the potential to do and become. Regrettably, it went far beyond what I consider to be healthy, responsible or even credible, in what it suggested in this regard.

The Bad

"What the Bleep" pans traditional religions in general. In my view, the most important dividing line with regard to belief systems is between the literalist and the metaphoric. And "What the Bleep" promotes a kind of literalism that in my view is far more negative than positive. It suffers from the same ill as does what it more severely critiques – institutional religion. In this regard "What the Bleep" resembles intellectual Mormonism with its curious mixture of monist literalism that gives way to postmodern relativism as soon as some aspect of the literalist position is sufficiently discredited. So "What the Bleep" both tells us that quantum uncertainty makes everything uncertain, and that this means we have the ability to control our lives in a fashion that most of us would find attractive. It also says that quantum uncertainty guts all of the philosophies that compete with the creators of "What the Bleep" for our attention in the spiritual marketplace, while yielding control over all existence to those who understand the secret basis on which that control is exercised. And you can guess who that might be.

The oldest religious trick in the book is to claim a monopoly on the truth. That is what the monotheistic innovation in religious terms was largely about (See Karen Armstrong, "The History of God"). JZ Knight and "What the Bleep" do this in an innovative fashion. They tell us that by "intending" or choosing we can control reality. But what will happen when all of those nice people who saw the film go home and try that out? Reality is highly probable to stubbornly resist their efforts to control it. But once someone believes such control is possible, it is not logical to conclude that the only thing preventing that control is some missing technique or other secret? And where might one find that secret? It does not take a rocket scientist to figure that one out based on how the movie is structured. It is not in my view a coincidence that there was only one organization connected with the making of this film that is in the business of dispensing advice with respect to how reality can be controlled, or giving spiritual advice in general.

Another sales trick as old as dirt is the "bait and switch". People come to you for advice as to how to control reality but find that while they never do become advanced enough to do that. However, their coming to you gives you the chance to put on your show for them. If they like it, perhaps they and their friends will continue to patronize your business in any event. "What the Bleep" sets that scenario up nicely for Ms. Knight and Co.

The film presents a minority - or even lunatic fringe - view of quantum theory (See <http://www.thoughtware.com.au/philosophy/philref/PHILOS.04.html> for one of many rebuttals to the kind of idea on which the movie is based). Quantum theory is based on the Heisenberg uncertainty principle, which states that there are limits as to how accurately the variables of momentum and position of a particle can be determined in the quantum world. That is, if momentum is measured a degree of uncertainty cannot be overcome with regard to position, and vice versa. And a variety of baffling experiments have been used to prove this point that show, for example, that the same particle must be passing simultaneously through two slits in a screen on their way toward a target in order for the observations to be what they are. That is, until the particle has been observed, it has more than one location (See http://en.wikipedia.org/wiki/Uncertainty_Principle).

The mainstream view is that behaviour at the quantum level can be understood and predicted quite nicely using probabilistic models (See http://en.wikipedia.org/wiki/Uncertainty_Principle and Richard Feynman, "Six Easy Pieces - Essentials of Physics Explained by Its Most Brilliant Teacher", p. 135). As Dr. André de Gouvêa, a particle physicist at Northwestern University puts it, "Contrary to ordinary beliefs, quantum physics is very predictive ... The theory can't predict with precision what will happen, but it knows everything that can happen and it will tell you the probability of all these things happening." (See <http://www.csmonitor.com/2004/1014/p12s01-almo.html>)

And in any event, uncertainty at the quantum level (such as it is) has not been demonstrated to have anything to do with uncertainty at our level much larger grained level of "reality". As the Christian Science Monitor puts it, "... above a tiny size range, quantum properties collapse, and particles start to behave in the way described by classical physics - more like bowling balls than fuzzy clouds of "wave functions." (See <http://www.csmonitor.com/2004/1014/p12s01-almo.html>) This means that "What the Bleep's" depiction of human beings having various possible, simultaneous existences from which they can choose is not supported by quantum mechanical theory.

And likewise, quantum mechanics as interpreted by the vast majority of those who understand it provides no support for the idea that the human will can influence the nature of matter. "The movie is saying that somehow we can all get together and, with our collective thought processes, we can influence the outcome" of physical events - be they life experiences or scientific experiments, notes Bruce Schumm, a particle physicist at the University of California at Santa Cruz. "But that's two leaps beyond what scientists believe to be true." (See <http://www.csmonitor.com/2004/1014/p12s01-almo.html>)

And what if the theory of quantum mechanics is itself incorrect or at least incomplete? This is an intriguing possibility that has recently been gathering support. That is, Einstein was perhaps right after all and quantum mechanics is a fundamentally flawed theory (See Scientific American Special Edition, September 2004 - Beyond Einstein, "Was Einstein Right" by George Musser, pp. 89 - 91). Various theories are now under serious consideration that attempt to explain the observations at the base of quantum mechanics using theories involving information loss (that is, the observations just noted are the result of measurement problems, not fundamental uncertainty) and other more esoteric theories.

Simply put, "What the Bleep" presents a highly misleading impression of what most scientists versed in the area think quantum mechanics is about.

The Ugly

"What the Bleep" takes a few good ideas - like it is good to maintain as positive an attitude as possible - and blows them out of proportion using a specious interpretation of quantum mechanical theory as justification for doing so. For example, the film encourages those who use drugs to help control their moods to "intend" themselves well and get rid of their drug therapy. This is often a disastrous strategy. Most of us know at least one person whose life has been ended, or tragically altered, by a loved one who decided to stop taking medication he or she needed to take.

"What the Bleep" tells us, in essence, that if we exercise the right kind of faith (called "intentionality" in the film), hold our mouths just right and buy the books and take the course offered by the people who have the special, mystic knowledge about how this process works, then we can take control ourselves and our environment; we can "intend" into being much of what we want. We can at least defer and perhaps avoid sickness and old age. We can live without medication, depression and whatever else afflicts us. And, if we don't achieve the results advertised, it is presumably our fault. We did not have enough faith; we are not yet sufficiently "developed"; we need to buy more books and take more course; etc. This is a classic charlatan strategy - make sure you can never be proven wrong. And if you throw in heavy financial contributions and unlimited sex for the leaders, you would have something that approximates early Mormonism, as well as countless other religious and quasi-religious movements.

Many religions use the same type of program we see outlined in "What the Bleep". Again, consider the parallels to early Mormonism. Back then, the popular controversies included what happened to unbaptized children after death, where the American Indians came from, why there were so many contentious religious sects, and a variety of other things. Joseph Smith produced answers to each of these questions that were credible to a certain segment for the population of his time as a result of the beliefs that they held and the evidence available to them that related to these questions. One of Smith's competitors in the religious marketplace of the early 1800s, Alexander Campbell, wrote that the Book of Mormon was Smith's attempt to answer with God's own voice all of the religious questions of the day as well as some broader social or historical issues (See

<http://www.lds-mormon.com/campbell.shtml>). That is, Smith told a story that gave a sense of meaning and purpose to his listeners, that addressed the questions in which they were already interested, and was sensible in light of what his listeners already believed about how the world worked. I see in "What the Bleep" nothing more nor less than this for a segment of today's spirituality market.

This is good old snake oil of the best kind, and will be purchased by many of those unfortunates who have some of the many needs just noted, and do not have adequate perspective to see this message for what it is - a clever marketing effort designed to separate them from their time and money in exchange for that oldest and most alluring of all commodities - hope. And because quantum physics offers some slight support for these theories it is pressed into service along with the credibility of the *de facto* high priests of our society - credentialed scientists. And both these mules are immediately loaded up far beyond their reasonable capacity in an attempt to support the conclusions "What the Bleep" suggests to us. And I note that quantum physics is so hard to understand given the current state of scientific knowledge and technology that Richard Feynman - one of physics' greatest teachers - said that he did not understand it.

As metaphor many of the ideas in "What the Bleep" are useful. Are we often capable of more than we think we are? Yes. Does positive thinking have an effect on how we feel and how much we can accomplish? Of course it does. Can we get into unhealthy emotional cycles, and are we well advised to try to break out of them? You bet. But is it a good idea to throw away all of our mood related (and perhaps other) medications, as the film's heroine did, and simply "intend" ourselves well because our "intentionality" determines reality by virtue of quantum mechanics? Come on. Until I am presented with some double blind studies that show this can be done, I will not bet anything of substance on it while maintaining the most positive and realistic attitude I can about all aspects of my life.

Two striking "scientific" studies were referred to by the film in aid of its conclusion that mind can control what most of us naïve sorts think of as objective reality. One related to how water molecules react to thoughts projected at them (nice thoughts produce beautiful crystals while negative ones produce pond scum - and our bodies are mostly water! Yikes!). The other described how group meditation lowered crime rates in Washington D.C. Neither experiment has passed any kind of demonstrable scientific muster. And the most recent and widely heralded studies in this regard that related to the effect of prayer on healing have been shown to be based on inadequate controls at best, and are being investigated for fraud (See <http://www.csicop.org/si/2004-09/miracle-study.html>) Again, show me some reliable evidence that mind can influence matter in the manner "What the Bleep" suggests and as mystics have been saying it can forever, and I will be all ears. And I don't mean the stuff that shows how my positive thoughts can influence my body, or how when someone I love knows that I love them that this can help them. I am talking about things like meditation bringing down crime rates or prayer for those who are unaware of it influencing healing rates or thoughts changing the molecular structure of water. I would be excited to see a real scientific study that demonstrates that this kind of thing can happen. Were such a study to be

produced, we would not need to wait for something like "What the Bleep" to hear about it. It would be on the front page over every decent newspaper in the world.

Much of what science does is an attempt to do one of two things: First, to understand cause and effect relationships so that we predict what will happen in the future; and second, to expand the range of what we can control. Quantum physics helps us to predict some things at the subatomic level. It so far has shown no ability to help us predict human behaviour or things like human health. And it has shown no ability to help us control either of those things. At this point, it is an interesting theory that explains some things and fails to explain many others. As above below, there is a growing school of thought that Einstein was at least on the right track when he rejected quantum mechanics as at best incomplete. The story as to what is "real" at the quantum level of reality is far from having been told. However, it is clear at this point based on the evidence we now have that the ideas expressed by Knight and her two colleagues described above are not supported by the mainstream interpretation of quantum theory. Acceptance of Knight's view of things would be the intellectual equivalent of siding with the Holocaust deniers in the debate as to whether the Holocaust occurred, or those Mormons who still insist that the Book of Mormon is real history.

And within the structure of "What the Bleep" itself, most of what the mystics had to say about science was not supported by what the scientists said. In particular, the idea that we can determine the course of "reality" by our thoughts, intentions, faith (call it what you will) goes far beyond what all but a tiny minority of those who seriously study quantum physics would accept as a reasonable interpretation of what it means. At least one of the scientists was so disgusted by what was done with his interview that he has disavowed his association with the film (See http://www.salon.com/ent/feature/2004/09/16/bleep/index_np.html)

By coincidence, I re-visited a 70s classic this weekend - Richard Bach's "Illusions: The Adventures of a Reluctant Messiah" - and suggest that anyone who wants a much more metaphoric and hence in my view healthy treatment of this subject matter buy and read that book instead of seeing "What the Bleep". They both take about the same amount of time. I also recommend the movie "Waking Life" for a cutting edge artistic and thought-provoking treatment of many of the same issues "What the Bleep" butchers.

I have skimmed, but not yet read in full, Sam Harris's "The End of Faith - Religion, Terror and the Future of Reason" (See <http://query.nytimes.com/gst/fullpage.html?res=980DE7D9113EF936A3575AC0A9629C8B63>). He makes a good case for why the kind of magical thinking that characterizes Mormonism and other literalist, fundamentalist faiths does much more harm than good. One of his ideas that I like in particular is that we should not simply smile and be polite when people express their faith in ways that make no sense. The appropriate thing to do, suggests Harris, is to let them know that we do not agree with them because, for example, their position makes as little sense as that of many other faiths whose tenets they reject as looney. Magical thinking is

magical thinking. Literalist Christian magical thinking is no more commendable than Voodoo or a similarly literalist Muslim faith.

It is my view that movies such as "What the Bleep" should be given the bum's rush in the same fashion and for the same reasons Harris' recommends we show literalist religious faith the door. The nice thing about science is that it has a built in self-correcting, testable mechanism to rid itself of bad ideas, even if it is rather slow. As the great philosopher of science Thomas Kuhn noted, science progresses one funeral at a time. What he meant was that even in this bastion of objectivity, human beings become so wedded to their pet theories that improvement often arrives when the old guys, and their ideas, permanently depart the scene. That science struggles in this way should lead us to expect that when it comes to something as subjective and hence so hard to test as religious belief, error is likely to be abandoned at a painfully slow pace. And this is what we observe. This process will be speeded up to the extent possible if silliness is publicly branded as such.

More than ever before, I appreciate the majesty, wonder and mystery of life. Some accuse me to too romantic, or mystical myself (See, for example, <http://mccue.cc/bob/documents/rs.changing%20seasons.pdf> or <http://mccue.cc/bob/documents/rs.camp%20caroline.pdf>). It seems to me that "What the Bleep" alternated between disclosing this mystery, and then trying to explain it away or use it as a hook to persuade me to do something. James Joyce called this "didactic pornography" (See <http://mccue.cc/bob/documents/rs.creativity.pdf>). I am content to simply accept the mystery and allow it keep my mind open to what might be possible, while not allowing myself to be persuaded by those who would amplify my hopes and fears in order to elicit my obedience. If you want me to follow you, bring either good art or good evidence as to cause and effect based reasoning that suggests it is in my interest to do so. My time, energy or other precious resources are too scarce to be used in any other way.

Conclusion

So, in the end, "What the Bleep" is on balance, in my view, much more bad than good. It is not good art, in my view. And it is certainly not something I would recommend to anyone who was trying to understand quantum physics or microbiology. It is, rather, a misuse of science masquerading as a documentary and amounts to the very kind of propaganda for which religious organizations like the Mormon Church have become infamous everywhere except within their own uncritical confines. This film might even bring a smile to Leni Riefenstahl's lips (See <http://www.leni-riefenstahl.de/eng/bio.html>).

As a postscript (added May, 2005) I note that a variety of other reviews have now come out that run along lines similar to mine. See, for example, <http://www.wweek.com/story.php?story=5860&page=1> and the most recent issue of Skeptic Magazine (see <http://www.skeptic.com/>).