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In this month's issue:

- [Legalized Skepticism](#)
- [Healthy skepticism](#)
- [Letters](#)
- [The third eye](#)
- [Up a tree](#)

Legalized Skepticism

By Joe Voelkering

When rational skeptics are challenged about their philosophy of including an "uncertainty factor" in conclusions, they likely respond by citing an old standby, the scientific method. However, they could also use a set of similar standards that most people readily accept without question, those used in our courts.

Much of our modern legal system can be traced back to principles and procedures evolving from the late twelfth and early thirteenth century period -- when the Magna Carta was debated and defined. With the benefit of that 800 years of evolution, legal scholars have obviously come to a conclusion familiar to skeptics: It's virtually impossible to determine facts to an absolute certainty.

Let's look at the standards of evidence and proof used to decide issues -- including cases involving millions of dollars and ones resulting in capital punishment:

Typically, civil litigation employs a standard of proof requiring a "preponderance of the evidence" -- which is defined as "more likely than not." For instance, consider an alleged defect in the design of a product that results in personal injury. Establishing more than a 50% probability that the defect existed -- and caused injury -- could be all the "proof" needed for an award of millions. Further, the 50+% "proof" might also be regarded as a "fact" -- as established by the finding of that court -- in other courts hearing cases on the same issue.

At a higher interim level, is "clear and convincing proof" -- which is defined as "highly probable," per the evidence. It's more than just a preponderance of the evidence -- but still leaves room for at least a "reasonable" doubt. It's a standard employed mainly in specialized court procedures.

There are also numerous unique, potentially much lower, standards in use by a variety of administrative law forums. For example, the National Transportation Safety Board determines "probable cause" for major accidents. However, there seems to be no specific value as to how probable that must be. Common interpretations appear to be "most probable" or "most likely." With all due respect to the Board, it could be listed as "best guesstimate" in some reports.

Moving back up the scale, the highest level is "proof beyond a reasonable doubt" the standard normally used in criminal cases. For some reason, it is often improperly quoted as: "... beyond the SHADOW of a doubt." However, it clearly is "... beyond a REASONABLE doubt" when cited by courts -- including those adjudicating capital offenses.

Finally, there is another unique procedural standard, used by the Supreme Court and many other appellate-type courts. Generally, most issues decided by such courts are of a legal -- rather than of a factual -- nature. However, they do rule on the admissibility of factual evidence -- including testimony by scientific experts.¹ The probability standards noted previously continue to be the norm for evaluating the credibility of factual evidence. The major distinction of these courts is that, unlike lower courts utilizing lay jurors, binding decisions typically require agreement by only a majority of the Justices.

Thus, it's not uncommon to see very important issues decided by a five-to-four margin. That standard certainly seems to leave room for a fair amount of "collective skepticism" among the group as a whole. It also shows that science is not the only forum where the participants openly acknowledge some degree of uncertainty in their determinations.

So -- the next time someone takes you to task for admitting to a finite amount of doubt about a conclusion, you can respond with a simple question: "Do you think I should have a higher level of confidence in that matter than we expect to see in decisions by the Supreme Court?"

Notes:

1. See THE SKEPTIC, Mar 92, "Junk Science and the Courts: Not All Bad News" and Aug 93, "Supreme Court Rules on Junk Science Case"; both by John Thomas. [Also reprinted in SKEPTICAL INQUIRER, Fall 92 and Winter 94, respectively.]

[\[back to top\]](#)

Healthy skepticism

By Tim Gorski, M.D.

Alternative Medicine In Decline

Although it may not seem so, "Alternative Medicine" is in decline. With major changes in the nation's health care system in the offing, up to and including outright government ("socialization") of American medicine, medical quacks are beginning to realize that their carefully cultivated antagonism to medical science may result in their being denied access to the public trough. Even the American Chiropractic Association abruptly changed course last year with its issuance of a qualified endorsement of childhood immunization, which was seen as an act of betrayal by chiropractic die-hards.

Another new trend is that, here and there, the quacks are beginning to adopt the new banner of what they call "Complementary Medicine." This presages an effort by the promoters of homeopathy, "health" foods, macrobiotics, megavitamins, chelation therapy, and the rest of the parade of miracle cure-alls to portray their well-worn cons as being somehow helpful in combination or at least compatible with approaches to disease-based medical science.

An example of this new approach is Dr. Robert C. Atkins' (of *Diet Revolution* fame) Atkins Center for Complementary Medicine, which is mentioned in a recent solicitation for subscriptions to Atkins' monthly newsletter. Received by many area residents, the mailing gives some other interesting, if unintended, insights into the world of medical quackery.

Of course, there are the usual selective and biased half-truths presented as little-known pearls of wisdom, such as:

- that people taking oral diabetic medications are at increased risk of heart disease [as are diabetics generally!]
- that "psychotropic drugs [drugs that affect mental function] cause weight gain" [the drugs themselves don't "cause" weight gain because they have no calories, but the emotional and/or mental disorders they are used to treat are commonly associated with appetite changes!]
- that "breast cancer keeps increasing 2% a year" and that "two *highly* [emphasis in the original] common drugs prescribed for women [are] the culprits" [these are drugs used for hormonal replacement and which are known to significantly reduce heart disease in women past the age of menopause; women who live longer are, in turn, more likely to get breast cancer!], and
- that "England has 50% fewer surgeries than the U.S. But their mortality rates are virtually equal. The inescapable conclusion? Half the surgery here is unnecessary!" [Or, one could escape the "inescapable" conclusion by supposing that Americans undergo more surgical procedures that "unnecessarily" only improve their quality of life, or that foreigners travel to the United States more than they do to Britain for elective or necessary surgery, among several possibilities!]

Then there are the scare tactics such as these:

- that "your dentist may be poisoning you ... destroying brain tissue ... and causing cardiovascular, immune and nervous system damage, as well as the degeneration of other organs and systems." [undoubtedly the reference here is to mercury amalgam fillings, for which, in reality, there is no evidence of any health risks] and
- that "you probably have a certain appliance in your home that will increase your child's chance of getting leukemia by 70%" [possibly an electric blanket is meant: that there is any danger is highly speculative at best]

The Atkins mailing throws in a few reliable facts for good measure. (Ah-hah! So even skeptics have to agree with some of what we say!)

Finally, there is this fascinating admission: "For many health problems, orthodox [sic] medicine is your best bet for treatment," and an offer is made to disclose "which disorders are which." Unsurprisingly, acute heart attack, early cancers, "late cataracts," herniated discs, meningitis, encephalitis, and endocarditis (the last three being life-threatening infectious diseases for which antibiotics are usually effective) are not among those which the Atkins Center is eager to manage with vitamins, herbs, and "health" foods! Rather, chronic diseases which are variable in their course and for which medical science has not yet found an effective cure (nor, it should be said, has "alternative" or "complementary" medicine) are the specialty of Atkins and his "network of top authorities on the planet," which reads like a who's who of fringe and fraudulent medical claimants.

Can you imagine the paranormalists taking this approach? Have we ever heard them make the point that telephones and even the U.S. Postal Service are a more reliable means of sending a happy birthday wish or confirming the particulars of an appointment or other event than is mental telepathy? Or have the seers into the future ever drawn our attention to the fact that maybe the newspaper or *TV Guide* might be a better source for finding out what movies will be broadcast this week on the networks and cable channels? My prediction is that "Complementary Medicine" promoters will be fighting hard for universal and unrestricted access to the nation's tax dollars (Oops! Make that "health insurance premium dollars.") during the process of enacting the Rodham/Clinton Health Care Reforms.

[\[back to top\]](#)

Letters

To the Editor:

To paraphrase René Descartes: I hope no one accepts my statements without being persuaded by their own reasoning. [Since I'm about to question items from recent issues of *The Skeptic*, I expect a like evaluation of my comments.]

Dr. Tim Gorski has done an outstanding job with his "Healthy Skepticism" columns -- which is deeply appreciated. However, a couple of subjects he reviewed seem to warrant further examination.

In two recent articles (September and December, 1993) Dr. Gorski addressed FDA proposals on vitamins and nutritional supplements. I believe he stated, in substance, the FDA only wants to regulate labeling of those items.

I wonder if Dr. Gorski read the Advance Notice of Proposed Rule Making from the FDA ("Federal Register," June 18, 1993). It cites a "need to establish the levels of intake" and recommends establishing a "dietary supplemental limit ... for each vitamin and essential mineral" (apparently to be based on current "Recommended Daily Allowances"). That's far more than just regulation of labeling.

While the intake level proposals were apparently dropped in the final rule, the ultimate goals of the FDA seem fairly obvious. (Regretfully, bureaucrats sometimes use extortion-like methods: obtain a small concession now; come back for more later.)

Dr. Gorski also suggests the FDA proposal would "avoid such debacles as the tryptophan tragedy," etc. I believe the problem with L-tryptophan was traced to a contaminant involving a single supplier -- and that non-FDA approved L-tryptophan itself continues to be used by, among others, hospitals.

I have a very high regard for Dr. Gorski's opinions. However, on this matter, I question both the credibility of his contentions and his apparent faith in the FDA. I'd far rather make health-care decisions based on recommendations by Dr. Gorski and others with similar qualifications -- that I can accept, further validate or reject, as I wish -- than to rely on mandates by the FDA.

In the January issue, Dr. Gorski discussed chelation therapy. I find no fault with his statements, per se -- but they imply all types of chelation treatment are flawed. That suggestion is at odds with a well accepted text from the Mayo Clinic. It notes an effective treatment for lead poisoning utilizing the chelating agent penicillamine -- a drug described in the PDR as primarily used for removing copper from patients with Wilson's Disease.

I used to spend a fair amount of time at an indoor target range -- as a safety officer, instructor and competition-level target shooter. For my peace of mind, I investigated remedies for lead poisoning resulting from exposure to lead dust. In the process, I found a military range officer that was successfully treated for an accumulation of such lead with chelation therapy.

I wholeheartedly agree that chelation therapy has been "over-hyped" and that it entails risks -- but it MAY be the best option for some cases involving the ingestion of toxic metals.

I hope Dr. Gorski agrees that skepticism about one's own assertions is, likewise, "healthy" -- and should be encouraged. If we're correct, scrutiny should give them additional validation; if we happen to be wrong, we'll catch them before they get perpetuated. I believe it's called a "win-win" situation ...

Joe Voelkering
Irving

Dr. Gorski responds:

Mr. Voelkering is entirely correct in that there is a legitimate use of chelating agents in unusual situations such as in cases of metal poisoning. But chelation therapy being promoted as a means of preventing, controlling, or curing atherosclerosis is not a case of it's being "over-hyped." It is quackery.

Concerning Mr. Voelkering's other comments, I will simply note the following:

1) As Mr. Voelkering admits, an early recommendation by the FDA to establish safe dosage limits for various substances was dropped. It may have been a good idea, though, inasmuch as limiting dosages would still leave people free to ingest 1, 10, or 100 capsules of a given product, as they see fit. Perhaps some individuals need to swallow a whole bottle of pills everyday to make them consider whether or not the potential benefits outweigh the risks of doing so.

2) No one yet knows the cause or mechanism of the tryptophan-related deaths and the outbreak of eosinophilia myalgia syndrome (EMS), most of which were traced to a tryptophan product manufactured by the Japanese firm Showa Denko. Consideration was even given to whether tryptophan dimers (two-molecule combinations of the amino acid itself) might be involved. The "contaminant" could also be some other substance that can arise naturally in the manufacturing process. Add to these uncertainties the reports of EMS occurring among users of other "nutritional" supplements.

3) When it comes to medical claims, the null hypothesis is that a product or treatment is not only ineffective, but dangerous. Therefore, both their safety and efficacy must be supported by a body of credible evidence. It's an important principle where people's lives and health are at stake.

4) No one, in my view, ought to have "faith" in the FDA or in anything else. Nor should anyone think that scientific truth can be had by considering the "recommendations" of individuals with suitable "qualifications," such as "M.D." after their names. It is well known, for example, that the majority of cancer quacks possess legitimate credentials. Reason and evidence alone are the grounds on which truth and falsehood respectively stand and fall. The mechanics of this process are open to some interpretation, but there is little question that science (and medical science in particular) is a human social endeavor in which consensus plays an important part. As Mr. Voelkering suggests, critical public scrutiny of scientific questions is a part of this endeavor.

But in the real world, the force of persuasion is seldom the only influence. All too often, it is the persuasion of force, fraud, and fear that determines the outcome. This is obviously the danger associated with the FDA's regulatory powers. But it is the same danger that's associated with allowing people to make any sort of ridiculous claim that they think they can profit from. When the victims are the chronically and/or desperately ill, or even the worried well who believe that they can generally depend on the truthfulness of advertised claims, the danger is even greater.

The FDA itself grew out of the recognition of these dangers. It is at once rooted in and intertwined with the expectations of Americans about the safety and effectiveness of products and treatments that are made available to them. Mr. Voelkering may very well prefer to do without the FDA. But I can assure him that if the FDA were abolished, Americans would not suddenly become critical-thinking skeptics and join organizations like CSICOP and the North Texas Skeptics. Instead, many people would simply rely on the claims of the quacks.

While I've made my views on "alternative" medicine clear, I hasten to add that I would not necessarily be averse to alternative regulatory approaches. One scheme that might be worth trying would be for the FDA to simply regulate labeling by a color-coding process. Labeling that met current requirements might, for example, be tinted green. Claims that were less well-supported might be expressed on yellow labels. A third color, say red, could be reserved for products and claims intended "for human guinea pigs only."

Even this would create problems, though. Would the manufacturers of red-labeled products escape any sort of liability for their use in the way that cigarette makers have benefited from the Surgeon General's warning? If so, would even the makers of legitimate and useful remedies rush to get the red label? And what about people who deliberately ingested a red-labeled "plutonium energy tonic?" Should their health insurance company (or the government) have to pay for the treatment of their leukemia or other malignancy?

The even bigger question is that while we should want our governmental agencies and authorities to stick to rational methods of discharging their public trust, what will be the effect on science and reason as the public trust in government continues to erode? What does it mean for rationalism and skepticism that the state seems increasingly unwilling and/or incapable of recognizing, let alone living up to, such a standard?

These are not just interesting, but urgent questions. But until and unless Mr. Voelkering can sort them all out, I invite him and others who may share his misgivings to join with me in a grudging acceptance of the fact that, for now, the FDA still has an important role to play and that granting a wholesale exemption from regulatory scrutiny to the vitamin and health food industry will not solve anything.

[\[back to top\]](#)

The third eye

by **Pat Reeder**

I really don't know whether to be appalled or flattered.

I refer, of course, to the recent report on the "Total Overcomers," on KDFW-TV Channel 4's 10 p.m. newscast. I could be appalled that an ostensibly responsible news organization aired such a credulous and unquestioning promotional puff piece for an utterly insane pseudo-scientific religious cult ... or I could be flattered, since the only possible justification for running this irresponsible dreck was to annoy me personally. A few months ago, I had words with KDFW News, via this column, phone and mail, over their credulous promotional puff piece on Travis Walton and *Fire In The Sky* (the movie about Walton's alleged UFO abduction ... remember it now?). Perhaps this was just their way of getting back at me. The recent piece even featured an uncredited clip from *Fire*, perhaps as a secret tweak. Hey, stranger things have happened (not to Travis Walton, however).

In case you missed it, here is what passed for a news story on KDFW ... Normally reliable reporter Shaun Raab presented a one-minute profile of a group called the Total Overcomers, who are barnstorming the country, warning that the end is near and looking for others like themselves. By that, I mean people who have crossed to the other side, seen the afterlife, and realize that our planet is but an experiment under the control of beings who are monitoring us from flying saucers. In fact, the Earth itself is entirely under the control of these beings, who have visited the recent floods, freezes and earthquakes on us as part of their experiments.

The report consisted of four spokespeople sitting at a table and explaining all this tommyrot, illustrated with 1950s style *Amazing Stories* drawings of aliens at their saucer controls hovering over Earth, plus the aforementioned clip from *Fire In The Sky* of a transfixed Travis Walton bathed in light, some Gulf Breeze-type UFO photos, and some whirling clouds apparently inspired by old Roger Corman movies about LSD. The report contained not one word of dissenting opinion ... no skeptics, no psychiatrists, no investigation of these peoples' claims ... not even one word about who they are or where they came from!

And to top it all off, something I've never seen in a legitimate news story: throughout the entire piece, KDFW played eerie, minor-key music to heighten the suspense ... just like at the movies! Now, because I have extensive experience in radio/TV production, I am willing to give them the benefit of the doubt that the music was there to help drown out the noticeable room hiss that was evident during the interview portions. But if the idea of the music was to drown out all the useless, obnoxious noise, then they should have turned it up much, much louder.

And when the story ended, what was the reaction of the anchor people? A raised eyebrow and a bemused chuckle? A disclaimer that this was a feature story, intended for entertainment purposes only? A suggestion that if you believed anything you had just seen, you should immediately seek counseling?

No. Clarice Tinsley looked into the camera, completely straight-faced, and informed us that the Total Overcomers were holding seminars in Addison on Thursday and in Dallas on Saturday.

This is news?! I guess Channel 4 thinks so. Frankly, I am totally overcome.

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Speaking of disasters, the recent California earthquake provided psychics with a wonderful opportunity to display their forecasting abilities ... alas, none of them saw it coming. There was one amazingly accurate prediction, though, by a man named Jack Coles.

Coles is a former stereo salesman with no college education who operates something called the Early Warning Earthquake Detection Network out of his home in San Jose. Coles has a theory that earthquakes can be predicted from changes in radio waves and electromagnetic fields. Government geologists have examined his electronic equipment and declared that they can make no sense of it. Yet, two days before the earthquake, Coles sent out a fax to the media predicting a quake of at least 6 on the Richter scale within three days, based on "increased radio signals, magnetic anomalies, and many cases of electrical problems."

Unfortunately, the media ignored his prediction, because he had made a similar prediction of a big quake for September 10, 1991, and only two small quakes materialized. Still, compared to the psychics, he's batting 1000.

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There seems to be no shortage of people who are willing to tell us what all these recent natural disasters mean. If it isn't the Total Overcomers claiming that the cold weather is the result of experiments by space aliens, then it's followers of Gaia telling Larry King on CNN that the Los Angeles earthquake is the Earth's way of telling us not to cut down the rain forest. While I agree that cutting down the rain forest is not a good thing, I sincerely doubt that the L.A. earthquake has anything to do with it. It seems to me that we have a lot of incompetent interpreters running around, incorrectly translating what the Earth is saying. So, as a public service, I shall now translate for you exactly what the Earth is trying to tell us with these natural disasters ...

1. The L.A. Earthquake: "Don't build a city on a major fault line."
2. The Midwest Floods: "Don't build a house in a flood plain, particularly if you don't plan on buying flood insurance."
3. The Deep Freeze in the Northeast: "If you don't want to freeze your rear end off eight months out of the year, move to Texas" (I lived in Connecticut for two years and can vouch for this personally).

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And now, random news from around the world ...

Rep. Steve Schiff (R-NM) has initiated a General Accounting Office investigation of the Roswell crashed-saucer tale. This was prompted by a flood of constituent letters demanding action, further proof that the founding fathers were correct to select a representative form of government, rather than allowing the masses to do all the thinking. The Pentagon told the GAO they had no records on a 1947 saucer crash and sent the investigators to the National Archives, which also could find nothing, even among the copious Project Blue Book records. What does this complete and total lack of evidence tell us? Why, it's proof that there's a conspiracy to keep it secret, of course! Your tax dollars at work ...

If you have vacation time open on April 30, you might want to head for Bojnice, Slovakia, for that town's first international ghost festival. Organizers hope to draw occultists and tourists from around the world, so they're offering something extra: they've booked a ghost! That's right, a real ghost, dead and in person!

Jan Papco, curator of the local haunted castle, says that a clairvoyant has made contact with a legendary ghost called the Black Lady, and "she has agreed to come." I don't know if she's like Tinkerbell, and you can only see her if you believe. But it might be worth the trip, just to find out. Besides, I hear they've booked Elvis as the

entertainment ...

The archbishop of Paris has launched a campaign to make Jacques Fesch a saint. Fesch was the son of a rich banker who got mad when his daddy wouldn't give him money to buy a yacht. So he tried to steal it and ended up murdering a policeman. During his three years in prison, he repented and lived like a monk until he was guillotined in 1957, which I guess makes him eligible to be patron saint of people with severe paper cuts. Police and French newspapers were outraged at the suggestion that Fesch be made a saint (they must have realized that living like a monk isn't that much of a sacrifice when you're already in prison). But the Archbishop says that canonizing Fesch would show that "no one is ever lost in the eyes of God, even if he is condemned by society." Perhaps there's hope for David Koresh after all ...

Finally, you might recall that last month, I jokingly suggested that silly "political correctness" controversies on college campuses were possibly the result of the students not having enough real work to fill their time. Since then, the Knight-Ridder news service has distributed a list of some actual college courses being offered these days ... and no, this time, I'm not joking: Penn State now offers "Introduction to Television Meteorology" (does this course explain why the anchor people think the weather forecaster actually causes rain?) ... Temple University has "UFOs In American Society" ... The University of Alaska has "Advanced Backpacking" (Lesson 1: Don't put any books in those backpacks! They're waaaaay too heavy!) ... Lehigh University offers "Food For Thought," a course that explains "the ways people use food to make statements about themselves and their relationship with others" (if you don't like the class, throw a tomato at the teacher) ... and of course, the most challenging of all, the University of Colorado's "The Madonna Phenomenon."

Oh sure, you might be thinking that this is just a scam to make parents pay big tuition bucks while their kids sit around watching Madonna videos and chalking up an easy college credit! Ha! Shows what little you know! This class is for deep thinkers only! Here's the course description:

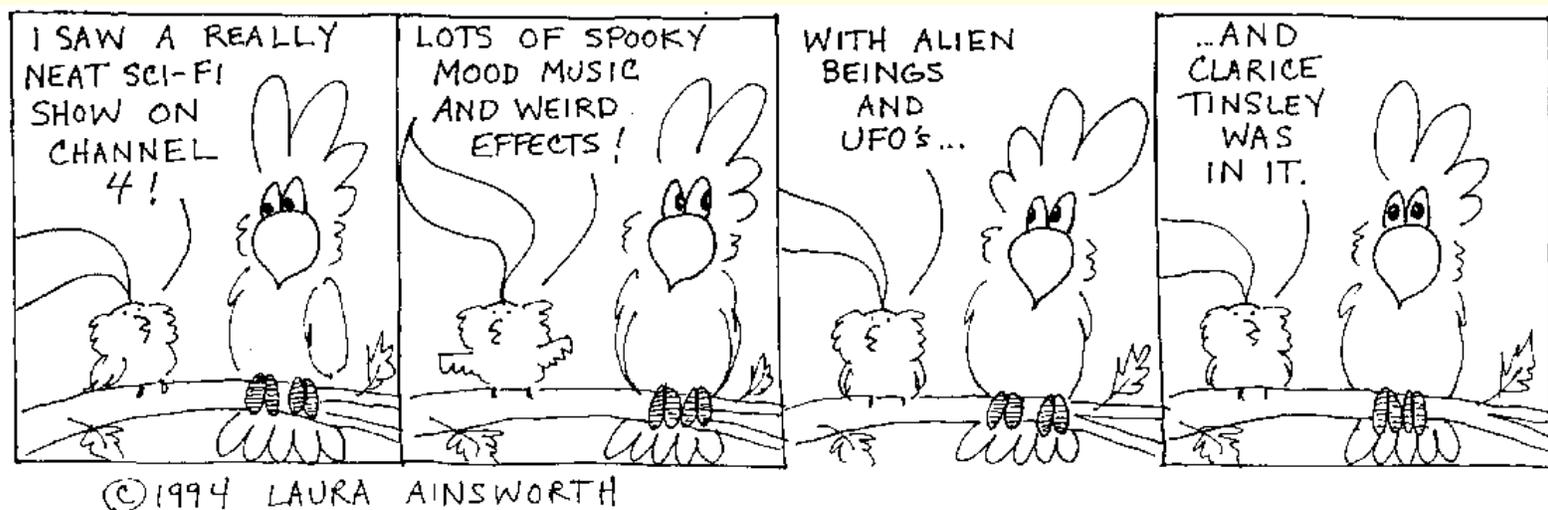
"The objective of this course is to formulate new ways to look at performance via the performer. Using Madonna's videos and films, the course will explore the presentation of gender in costuming, makeup, gesturing and movement. ... Overall, this class will use a postmodern and cultural studies framework to conduct textual analysis in order to read the gender code and spectator response, and the gay male, lesbian, androgynous, and feminist narrative in Madonna's videos."

I can just hear the discussion period now ... "Hey, Beavis! Madonna just grabbed her crotch!" "Yeah, Butthead! She's eliciting spectator response by using post-modern gestures to circumvent traditional sex role expectations." "Hey, I think I saw a nipple! A-heh! A-heh! A-heh! ..."

[\[back to top\]](#)

Up a tree

A skeptical cartoon by Laura Ainsworth



[\[Back to top\]](#)