**AUGUST 17, 2008 THESKEPTICARENA.COM**

**Argument # 9: Science is the only reliable method.**

**Typical Usage: "The only reliable way to know about anything is through the scientific method. All other methods are unreliable."**

**WINSTON, I WOULD AMEND THAT STATEMENT SLIGHTLY TO SAY THAT THE SCIENTIFIC METHOD IS THE BEST METHOD TO DATE. AND THERE DOESN’T APPEAR TO BE ANY CHALLENGERS IN THE ON DECK CIRCLE.**

**This statement is usually made by skeptics who glorify and worship science as their God,**

**WINSTON, TRYING TO EQUATE SCIENCE WITH RELIGION IS PATHETICALLY WEAK. RELIGION IS BASED ON FAITH (THAT MEANS NO EVIDENCE IS REQUIRED). SCIENCE IS THE EXACT OPPOSITE: ONLY EVIDENCE IS ACCEPTED - FAITH WITHOUT EVIDENCE IS SENT PACKING.**

1. **First, this is an absolutist statement since there is not just one single way to know everything.**

**WINSTON, THAT IS WHY I CLARIFIED YOUR MISDEFINITION ABOVE: THE SCIENTIFIC METHOD IS NOT THE ONLY METHOD, IT IS SIMPLY THE ONE THAT HAS PROVEN ITSELF TO WORK THE BEST.**

**Other ways of knowing things include direct observation,**

**WINSTON, YOU MEAN LIKE IN A LABORATORY? SOUNDS LIKE SCIENCE TO ME.**

**personal experience, textbooks and articles,**

**WINSTON, VERY GOOD. YOU ARE DESCRIBING TECHNIQUES USED BY SCIENCE.**

**and advice from those who are wiser and more experienced than us.**

**WINSTON - THAT IS CALLED APPEAL TO AUTHORITY. IT IS ONE OF THE LOGICAL FALLACIES.**

**There are countless real things I can experience that don’t need to be proved by the scientific method. Even mundane examples can demonstrate that. For instance, I can see rainbows by direct observation even though I can’t bring them back to scientists, though they can see them too if they chose to go look.**

**WINSTON, HOW DO YOU KNOW WHAT A RAINBOW IS WITHOUT SCIENCE TO EXPLAIN IT TO YOU? UNTIL RECENTLY, HUMANS DID NOT KNOW WHAT A RAINBOW WAS.**

**I can learn parenting through the experience of being a parent,**

**WINSTON, THAT DOESN’T MEAN YOU’LL BE A GOOD PARENT.**

**and swimming by the experience of going into the water.**

**WINSTON, DON’T TRY THAT ONE WITHOUT LESSONS. MANY HAVE TRIED - NOT ALL HAVE RETURNED.**

**Marketers and businesses learn the marketability of their products through surveys. We can also learn valuable things from wiser and more experienced people too, despite the fact that we didn’t use any scientific method to check them out.**

**WINSTON, YOU CAN ALSO LEARN THINGS FROM PEOPLE MUCH DUMBER THAN YOU.**

**If Acupuncture or some alternative medicine technique works for me, then I know that it works for me regardless of whether it’s proven by the scientific method or not.**

**WRONG AGAIN WINSTON. MANY PEOPLE BELIEVE ACUPUNCTURE WORKS FOR THEM. THAT DOESN’T MAKE IT TRUE. ACUPUNCTURE HAS NEVER SUCCEEDED IN ANY SCIENTIFICALLY-CONTROLLED TEST. YOU MAY BELIEVE IT WORKS BECAUSE YOU AREN’T KNOWLEDGEABLE ENOUGH ABOUT THE PLACEBO EFFECT.**

**Not everything has to be official for it to be true. The scientific method is a tool for testing hypothesis and finding out things, not for defending one’s own paradigms.**

**BUT WINSTON, THAT’S THE WHOLE POINT: YOU WANT US TO BELIEVE YOUR PARADIGMS SIMPLY BECAUSE YOU CLAIM THEY ARE TRUE. WINSTON, THAT’S WHAT RELIGION DOES TO YOUR BRAIN.**

1. **Second, since successful psi results have been achieved in tests conducted under the scientific method,**

**WINSTON, WHAT? YOU MUST BE REFERRING TO TESTS IN YOUR BASEMENT.**

**Not surprisingly though, skeptics tend to only accept results done with the scientific method that show the results they want, which is no psi results and only chance results.**

**WINSTON, IT DOESN’T MATTER WHAT RESULTS WE WANT, THE SCIENTIFIC METHOD WILL PRODUCE EVIDENCE THAT WILL DETERMINE WHAT FLOATS AND WHAT SINKS. AND WINSTON, YOU ARE AT THE BOTTOM OF THE POOL.**

1. **Third, things don’t have to be proved by science in order to be true. Many things were true and real before science discovered or proved them.**

**WINSTON - EXCELLENT POINT.**

**Though the converse of this is also true, why should we consider the skeptic’s subjective dismissal as being more reliable than one’s direct experience? Besides, without direct experience, how would we know anything at all? A member of my discussion list, Greg Stone, put it very well when he posted:**

**"But balanced against science's supposed lack of evidence one finds the DIRECT EXPERIENCE of those who report. And the reports are consistent and voluminous.**

**WINSTON, WHAT IS CONSISTENT IS THAT THERE IS NEVER ANY EVIDENCE.**

**Thus, while science, according to Kurtz, cannot weigh in definitively on either side of the equation, the DIRECT EXPERIENCES are a fact.**

**WINSTON. A FACT OF WHAT? DELUSION? HALLUCINATION? MISINTERPRETATION? WITHOUT EVIDENCE, HOW ARE WE TO KNOW?**

**And, as everyone knows, we do not need to check with science to confirm all the aspects of our daily lives...we did not need to wait for science to properly define and experiment with the atom before we could manipulate things made up of atoms."**

**ACTUALLY WINSTON, THAT WAS SCIENCE THAT MADE THE EXISTENCE AND MANIPULATION OF THE ATOM POSSIBLE.**

**"Experience, direct knowledge, is of a higher order of understanding than mere subjective speculation without experience. If one were to accept your argument that experience is intrinsically invalid as a way of knowing, then you undermine your entire position as you have nothing else upon which to base ANYTHING. Thus, we see the weakness of a position that replaces firsthand knowledge, firsthand experience with the SPECULATION of someone who has no experience."**

**WINSTON, YOUR IMPLICATION THAT SCIENCE IS SPECULATION IS WAY OFF THE MARK, AS USUAL.**

**"Which one does the real scientist consider more valid... the report of a direct experience (make that volumes of consistent reports) OR the musings of someone with NO experience, only their speculation?"**

**NEITHER WINSTON. SCIENTISTS ARE TRAINED TO ACCEPT NEITHER. THEY ARE TRAINED TO ACCEPT ONLY EVIDENCE.**

**Now I don’t dispute that science is our best way of collecting knowledge, testing theories, or discovering how things work. The point is that it is not the ONLY way. And since science has not disproved the existence of God, life after death, spirits, or psi, then there is no point in skeptics trying to use science to dismiss those things.**

**WINSTON, THAT IS THE CRUX OF THE WHOLE MATTER. SCIENCE ACCEPTS AS TRUE ONLY THAT FOR WHICH IT HAS EVIDENCE. WITHOUT EVIDENCE, GOD, AFTERLIFE, SPIRITS, OR PSI ARE NOT ACCEPTED AS TRUE - UNTIL SUCH TIME AS THAT EVIDENCE IS PRODUCED. WHEN, AND IF, THAT EVER HAPPENS, THOSE SUBJECTS WILL THEN BE INCORPORATED INTO SCIENCE.**

**Furthermore, the best method of knowing things also depends on the kind of knowledge one is attempting to acquire. There are many issues and problems everyday for which empiricism is impractical or impossible. We make many rational daily decisions both individually and as a society that are based on no empirical observations. Sometimes common sense and direct observation are all that are required.**

**WINSTON, COMMON SENSE AND DIRECT OBSERVATION ARE NOT ELEMENTS OF UNSUPPORTABLE BELIEFS. THEY ARE ELEMENTS OF EMPIRICAL EVIDENCE.**

**Dean Radin points out in the beginning of his book The Conscious Universe: The Scientific Truth of Psychic Phenomena, that new scientific discoveries tend to go through stages. He writes: (page 1)**

**"In science, the acceptance of new ideas follows a predictable, four-stage sequence. In Stage 1, skeptics confidently proclaim that the idea is impossible because it violates the Laws of Science. This stage can last for years or for centuries, depending on how much the idea challenges conventional wisdom.**

**WINSTON, NOT ALL NEW IDEAS CHALLENGE THE LAWS OF SCIENCE. IF THEY DO, SUCH AS ALL OF YOUR BELIEFS, THEN THEY SIT ON THE SHELF WHERE THEY BELONG UNTIL THEY DO PRODUCE EVIDENCE, AT WHICH TIME THEY ARE PROMOTED TO SCIENTIFIC FACT.**

**In Stage 2, skeptics reluctantly concede that the idea is possible but that it is not very interesting and the claimed effects are extremely weak. Stage 3 begins when the mainstream realizes not only that the idea is important but that its effects are much stronger and more pervasive than previously imagined. Stage 4 is achieved when the same critics who previously disavowed any interest in the idea being to proclaim that they thought of it first. Eventually, no one remembers that the idea was once considered a dangerous heresy.**

**WINSTON, READ MORE SCIENCE AND WATCH MORE NOVA. READ LESS DEAN RADIN AND PLAY FEWER VIDEO GAMES.**

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**THE SCIENCE SEGMENT**

**Scientists Closer to Making Things Invisible**

**August 11, 2008

WASHINGTON -- Scientists say they are a step closer to developing materials that could render people and objects invisible.

Researchers have demonstrated for the first time they were able to cloak three-dimensional objects using artificially engineered materials that redirect light around the objects. Previously, they only have been able to cloak very thin two-dimensional objects.

The findings, by scientists at the University of California, Berkeley, led by Xiang Zhang, are to be released later this week in the journals Nature and Science.

The new work moves scientists a step closer to hiding people and objects from visible light, which could have broad applications, including military ones.

People can see objects because they scatter the light that strikes them, reflecting some of it back to the eye. Cloaking uses materials, known as metamaterials, to deflect radar, light or other waves around an object, like water flowing around a smooth rock in a stream.

Metamaterials are mixtures of metal and circuit board materials such as ceramic, Teflon or fiber composite. They are designed to bend visible light in a way that ordinary materials don't. Scientists are trying to use them to bend light around objects so they don't create reflections or shadows.

It differs from stealth technology, which does not make an aircraft invisible but reduces the cross-section available to radar, making it hard to track.

The research was funded in part by the U.S. Army Research Office and the National Science Foundation's Nano-Scale Science and Engineering Center.**

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**THE ARENA GOES ABROAD**

**Australia: Pope visit boosts sex industry**

 **This story is from mid-July, 2008.**

**As the Pope touches down in Darwin, Sydney's sex industry is ready for the big boom. Brothels have announced special "papal visit packages" for the 125,000 foreign visitors who come to Sydney for the World Youth Day (WYD) celebrations this week. Bordellos and sex shops across the city are expecting sensational turnovers. Many establishments have recruited extra staff to cope with the expected rush demand for sexual favours during the event. Some pride themselves on being able to welcome their pious international clientele in a wide range of languages with sex workers speaking French, Spanish, Italian, Greek, Arabic, Thai, Korean, Nepalese and Mandarin. The "Xclusive Gentlemen's Club" offers 10-per-cent discount to those with accreditation as official WYD visitors. As one of the biggest houses near Randwick Racecourse, the club expects to benefit from its proximity to the venue of the Pope’s final open air mass which is expected to attract half a million of pilgrims. The high expectations of the "Forbidden Fruit industry" are based on solid experience. When the World Council of Churches had their congress in Canberra back in the 1990s, we enjoyed our best business period ever, said a spokesperson of Australia’s adult industry group Eros Association.**

**When religious mass events are in full swing, sex seems to be in the air. After the WYD 2000 in Rome had closed its weeklong celebrations with Pope John Paul II’s open air mass in the Tor Vergata field, rubbish collectors discovered the next day thousands of used condoms in the debris of the festival ground. Media reports showed images of the find, but the Vatican angrily dismissed them as fabrications. Critics of the Vatican's doctrinal stance against birth control, extra-marital sex and the “grave sin” of contraception, however, never stopped mocking about it. They say it reveals that young Catholics have a blithe disregard for the Vatican’s reactionary teachings – which is indeed excellent news if correct.**

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**9/11 CONSPIRACY (FROM LAST WEEK)**

**I need to briefly discuss some statements made by a caller last week regarding the terrorist attacks that occurred on 9/11.**

**This is not meant to be a criticism of the caller nor of his beliefs. But this is a “critical thinking” show and the purpose of this show is to examine claims to ensure that they hold up to logical and scientific scrutiny.**

**The caller made a specific claim: that the fuselage of the boeing plane had a diameter of 16.5’. He also claimed that the distance between floors in the twin towers was 12.4’. He then claimed that it was impossible for the plane to go through the building without taking out two floors in the process. The caller believed that two floors would have provided so much resistence to the plane’s forward momentum as to make it impossible for it to exit the other side of the building. The caller said that video clearly shows the nose of the plane exiting the building.**

**When evaluating claims using your critical thinking skills, one of your primary weapons should be mathematics. mathematics is one of the few unambiguous areas of scientific study. Let’s review the claims above in light of the mathematics involved.**

**It is easier if you do this on a piece of paper while I discuss it. Draw a line representing any floor of the tower. Draw another line a few inches above and label the distance between the two lines as 12.4’ on the left hand side. Now draw the fuselage of a plane on the right side. Set the bottom of the fuselage on the floor. Therefore, since the fuselage is 16.5’, it will be drawn in a semi-circle and will go slightly above the ceiling. Label the fuselage 16.5’.**

**We see that if this plane had entered the level above the floor level, it would have taken out only the ceiling. As you raise the plane upwards, it will continue to take out only one level (the ceiling). The plane starts out 4.1’ above the floor of the higher floor and continues raising up until it bumps into the next ceiling at another 12.4’.**

**Not until you reach the floor above the one on which the plane entered, will the plane take out two floor dividers at the same time.**

**The distance that the plane moves up before hitting the next floor is 8.3’. The distance that the plane moves up where it is in contact with two floor dividers at the same time is 4.1’.**

**Now we must make one adjustment to the calculation. Obviously the divider between the floors cannot be an inch. It is likely between 1 and 2 feet. To be generous lets allow 2’, leaving 10.4’ for the actual usable space for workers.**

**Draw alternating floors (only two are necessary) and label each divider = 2’ and each floor = 10.4’. It is clear that under these assumptions, that the plane will be in contact with two floor dividers simultaneously about half the time.**

**Therefore, a plane flying level, has a 50% chance of hitting one floor divider and likewise, a 50% chance of hitting both floor dividers.**

**This simple mathematical check has shown that the claim that it is impossible for the plane to go through the building without striking both floor dividers simultaneously … is FALSE.**

**This does not refute the entire conspiracy. It only refutes the specific claim. This is the kind of critical thinking that you must do when people present you with a claim. To blindly accept as truth what you are told is to set yourself up to be fooled. The caller was not the one making the claim. He was someone who fell for it because he failed to check their math.**

**Math is one of the skeptic’s most powerful tools and it is amazing how many people don’t do the math when they try to foist claims off on others.**

**FAMOUS QUOTES**

**CATHY LADMAN**

**She is an American stand-up comedian, television writer, and actress. She was featured in her own installment of HBO's One Night Stand comedy series, and has been a guest on The Tonight Show on nine occasions. She has had numerous supporting roles in films like Don't Tell Mom the Babysitter's Dead, My Fellow Americans, White Oleander, "What Planet Are You From?" and Charlie Wilson's War (2007), as well as TV shows like Roseanne, Dr. Katz, Professional Therapist, Caroline in the City, and Everybody Loves Raymond. She won an American Comedy Award for Best Female Stand-Up Comic in 1992.**

**HER QUOTE:**

**"All religions are the same: religion is basically guilt, with different holidays."**