

The REALL News

The official newsletter of the Rational Examination Association of Lincoln Land

"It's a very dangerous thing to believe in nonsense." — James Randi

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The Physics of ESP, Part I by Robert Novella

Of all ostensible paranormal phenomenon, extra sensory perception (ESP) is probably one of the most well known and widely believed. Many people who generally have a skeptical attitude towards metaphysics still hold out hope that ESP is a real phenomenon and that someday it will be conclusively demonstrated. In any skeptical treatment of a phenomenon, experimental evidence is of paramount importance. In this regard ESP has not produced widely accepted and reproducible results after nearly one hundred years of trying. Another important consideration, however, is a possible mechanism for the phenomenon in question. If no plausible mechanism can be found then this fact must raise the level of skepticism towards the existence of that phenomenon. Countless experiments have been carried out probing the existence and reported capabilities of ESP, but few inquiries have been made into the requirements necessary for it to work. What does science say about the feasibility of such a phenomenon?

Extra sensory perception is perception that occurs beyond the conventional senses of sight, hearing, smell, taste, and touch. The primary manifestations of this phenomenon are said to be telepathy, precognition, and clairvoyance. Respectively these are: awareness of another's thoughts, knowledge of future events, and information about a remote object or area. Other terms synonymous with ESP are anomalous cognition, second sight, and remote viewing. All of this information gathering is apparently not acquired through conventional means but through an unknown sense that picks up signals from either another brain or an object or from the future itself.

Duke University researcher Joseph Banks Rhine coined the term ESP in 1934 in his popular book *Extra Sensory Perception*. He purported that his experiments unequivocally proved that ESP is a viable, demonstrable phenomenon. Not surprisingly, when more controls were added to his experiments, the evidence diminished and eventually vanished, but he attributed this to what he called "the decline effect." If skeptics were present and no effect appeared he invoked "the observer effect." In fact he had a special explanation for all of ESP's experimental

failures.

What, however, might an alleged ESP signal be? Perhaps a known force could account for it or maybe a force that has not been experimentally verified but theoretically might behave as ESP requires. If not these, then maybe there is another force about which scientists have not an inkling. Further, any hypothesized signal would need a receiving mechanism.

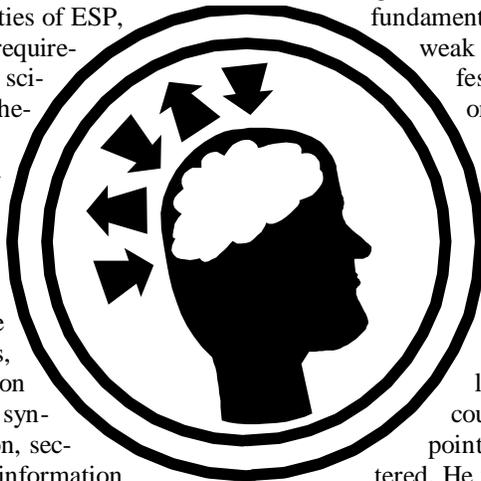
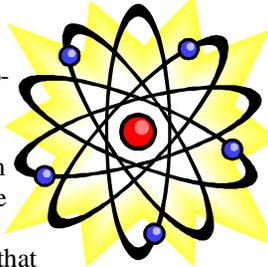
If a force does not implicate itself then at least we should be able to identify a part of the human body that evolved to interpret the force that carries ESP information.

Centuries of experiments, theorizing, and observation have revealed four fundamental forces in nature that can accurately account for all interactions of matter.

These forces are the strong force, the weak force, electromagnetism, and gravity. (Actually there are now three fundamental forces since electromagnetism and the weak force have been shown to be different manifestations of the same electro-weak force.) If one of these forces has the qualities required for ESP to exist then, at the very least, the feasibility of ESP would have to be entertained.

Before discussing these forces in detail, a quick overview of the basic structure of the atom might come in handy. The concept of an atom is not new, in fact it is 2400 years old. In 400 BC the Greek philosopher Democritus believed that matter could not be forever subdivided, that at some point an indivisible object should be encountered. He used the word "atomos," which means indivisible, to describe this fundamental and irreducible piece of matter. We have learned much in the intervening millennia. Briefly, the center or nucleus of an atom consists of a neutral (no electric charge) neutron and a positive proton. This nucleus is surrounded by a cloud of negative electrons that are attracted

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Purpose

The Rational Examination Association of Lincoln Land is a non-profit, tax-exempt 501(c)(3) educational and scientific organization. It is dedicated to the development of rational thinking and the application of the scientific method toward claims of the paranormal and fringe-science phenomena.

REALL shall conduct research, convene meetings, publish a newsletter, and disseminate information to its members and the general public. Its primary geographic region of coverage is central Illinois.

REALL subscribes to the premise that the scientific method is the most reliable and self-correcting system for obtaining knowledge about the world and universe. REALL does not reject paranormal claims on *a priori* grounds, but rather is committed to objective, though critical, inquiry.

The REALL News is its official newsletter.

Annual Membership Rates: Regular, \$20; student, \$15; family, \$30; patron, \$50 or more; subscription only, \$12.

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From the Chairman

David Bloomberg

May Meeting: Science in the Schools

Many times REALL members find ourselves in the position of debunker, playing the critic who points out flaws and questions results. However, there is another side to REALL and skepticism in general which I think too often gets overlooked. I'm talking about the side that **supports** science and education. We've done a few things in the past toward this area, but this month's meeting really puts forth the message.

As you may have heard or read in the paper, one area that is being hit because of people who voted against the recent Springfield property tax increase for our schools is the science classroom. According to the State Journal-Register (4/12), "One of the items axed when the Springfield School Board enacted \$9.6 million in budget cuts last month was the science kits that go with the new grades K-4 science texts the district recently bought. The textbooks could be purchased because the money—\$185,191—came from the Illinois textbook loan program. But those funds cover the books only, not additional educational materials."

Later, the newspaper followed up (4/14), noting: "the Springfield Public Schools Foundation announced the extremely ambitious goal of raising \$242,000 by Aug. 30 in order to buy science kits that will allow kindergarten through fourth-grade students to experience rather than simply read about science. ... (By the way, the number to call to make tax-deductible donations toward the goals is [217] 525-3006.) That's good news, but the phone needs to keep ringing."

To help in the goal of promoting science and education, REALL will be hosting representatives from the Springfield school district and the Springfield Public Schools Foundation to discuss science standards and fundraising efforts to buy science

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A Nod to Our Patrons

REALL would like to thank our patron members. Through their extra generosity, REALL is able to continue to grow as a force for critical thinking in Central Illinois. To become a patron member of REALL, please use the membership form insert. Patron members are:

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to the protons, canceling their charge and making the atom, as a whole, electrically neutral. Neutrons and protons themselves are each composed of triplets of bizarre objects called quarks. It is these quarks (and electrons) that are the most fundamental constituents of matter that we know and therefore compose everything.

Antoine Henri Becquerel (1852-1908) discovered the weak force (manifested as radioactivity, the spontaneous emission of particles by atomic nuclei) in 1896. There are different types of radioactivity, the weak force is responsible for a process called beta decay in which certain unstable atoms change a neutron into a proton and eject bits of themselves like electrons and anti-neutrinos. Different chemical elements are produced by beta decay; I’m sure that alchemists would have loved this process. Without this force stars would not shine and the molten interior of the earth would have cooled millions of years ago.

The strong force was discovered in 1921 by E.S. Bieler and James Chadwick. It is the force that binds quarks together forming the atomic nucleons: neutrons and protons. A residual of this force glues the protons and neutrons together overcoming the mutual repulsion of the positively charged protons. Consequently only a hundred or so stable atomic configurations (elements) have been identified that can balance electric repulsion between protons and the strong attraction. The strong force is by far the strongest found in nature, as evidenced by the power of a nuclear bomb which explosively releases the bound energy of the strong force. By comparison, dynamite is one million times weaker because it is governed by a much weaker force, electromagnetism (discussed later).

As exotic and indispensable as the strong and weak forces are they cannot be directly responsible for ESP, primarily because they act over such a short range. The range of these forces has been determined to be approximately one or two femtometers, which is approximately one ten-millionth the width of a human hair. One reason for such a limited area of effect is an exponential drop off in intensity as the distance increases between two particles. Within their domain these forces



*We seldom change the minds of the believers,
but we hope to educate those who are not quite
convinced—especially students.*

— Milton Rothman

accomplish amazing feats without which life and our universe would not exist, but a little more than an atomic diameter away they are powerless and thus cannot be directly responsible for extra sensory perception.

The nuclear forces described above might seem somewhat removed from direct personal experience, so what about a force that we can relate to? Gravity is just such a force. Everyday of our lives we feel and fight the force of gravity. It keeps objects on the ground, determines the shape of the earth, keeps planets in their orbits, and shapes the large scale structure of the universe. Such an apparently powerful and pervasive force surely might be able to account for ESP.

What does science tell us about gravity? It is an attractive force that affects all matter and energy in the universe. Nothing with mass is immune to the effects of gravity. Surprisingly, it also happens to be the weakest force of the four, so weak, in fact, that equations dealing with subatomic particles routinely disregard gravitation because its effects are negligible at an atomic scale. How, then, can such a weak force be so dominant and evident in our lives while much stronger ones like the strong force are virtually unnoticeable? This is due to two special properties of gravity: it is long range and always attractive. A force becomes manifest when particles exchange what are called virtual particles. It’s like two people on skates throwing a medicine ball back and forth and recoiling when the ball is thrown or caught. If you could not see the ball it would appear as if an invisible force was at work on the skaters. Now imagine that the ball weighed very little. The skaters could stand very far apart and still be effected by it. This is analogous to gravity’s virtual particle the graviton, which is massless and therefore can affect particles very far away. (This, of course, is just one of the ways to look at gravity, Einstein’s general relativity treats it as the curving of space-time.) The second special property of gravity, and absolutely crucial to its strength, is its unique ability to always be attractive. Gravity does not have opposite charges like the negative and positive electrical charges. This explains how huge objects like the earth can be electrically neutral. No matter how strong a charge is, if there are roughly equal amounts of positive and negative electric charge, no force will be noticed. This is how gravitation can be so weak yet still add up to a considerable force that can move clusters of galaxies.

Even with these special abilities it is the extraordinary weakness of gravity that prevents it from carrying ESP signals. The force gravity exerts between two brains is just too feeble to have any of the effects that ESP believers purport. Only on astronomical scales does its significance amount to anything. Additionally, there is nothing unique about the gravitational field of the human brain, gravity really only cares about mass. No

(“Physics of ESP” continued on page 5)

Visiting the La La Land of Creationism

by Clark Olson

On Sunday March 10, Mike Henebry and I made an expedition to Havana to check out a creationist talk which we had heard about through the REALL grapevine. We didn't know what to expect; we only knew it was at the high school. No one spoke to us as we entered so we just sat down quietly to see what would happen. About 100 people, including many children, came in. Eventually a minister gave a brief greeting and introduced E. Sattler of the "Creation Education Association" in Wisconsin.

He's a somewhat soft-spoken folksy person who started out sounding fairly reasonable, telling us about his background and his extensive family. But he quickly got into some outlandish stuff. His general approach was to just deny that there was any evidence for evolution. It quickly developed that he was a pure young earth creationist and doesn't want to compromise on any point. He covered a number of familiar topics in "creation science." For instance, he had some fossils which he showed the audience and then asked the children in the front row how old they were, to which they dutifully replied 2345 BC (the "date" of the Flood—he loves specific dates)! He then went on to talk about dinosaur tracks in Texas and what amazing things "creation scientists" are doing with them, of course, involving human tracks. He had a cast of a human footprint which was a little too perfect to be a fossil, but also about 16 inches long! I think Mike and I started feeling more than a little bewildered by then, but it got more fantastic when he started talking about Noah's ark. One crucial factor I didn't know: all those beasts (including dinosaurs) on board the ark were vegetarians, so Noah didn't have to worry about them eating each other. His evidence is that chlorophyll has been found in dinosaur teeth! He took the work from some other "scholar" who had figured out all the time and motion budgets for how many of Noah's sons would be needed to do the requisite watering (at least a lot of that was available), feeding (all plants as I said), and cleaning up (at least that wouldn't have been so bad with no nasty carnivore poop).

Being faint of heart (since I thought this was strictly a church crowd—I didn't find out until the next day that the meeting had been advertised to the general public), I wasn't able to ask him about where Noah put all those 100,000-plus beetles we hear about. Also since it has taken hundreds or thousands of taxonomists to identify the creatures we know about now and we're still only a tenth(?) of the way to the end, how was Noah supposed to have been able to identify all of them then?

To go back in time a bit, another area that he was knowledgeable about was Adam and Eve's family. It has always bothered me that Cain, Abel, and Seth had no apparent wives. This mystery has now been solved thanks to Josephus (first century CE Jewish historian). They had exactly 23 sons and 23 daughters. So then? Well they interbred—incest was okay. It didn't become a bad thing until about the time of Abraham. So for a day or so I was puzzled by this use of an extrabiblical source from the first century but not the use of information of modern time (i.e., science). Then I remembered his biblical chronology. Since the early patriarchs lived for so long (up to 900 yrs) and Adam and Eve were only a few thousand BCE, they could have passed down this information to Josephus's informants, thus filling in where the Genesis writers had forgotten to mention this First Family arrangement.

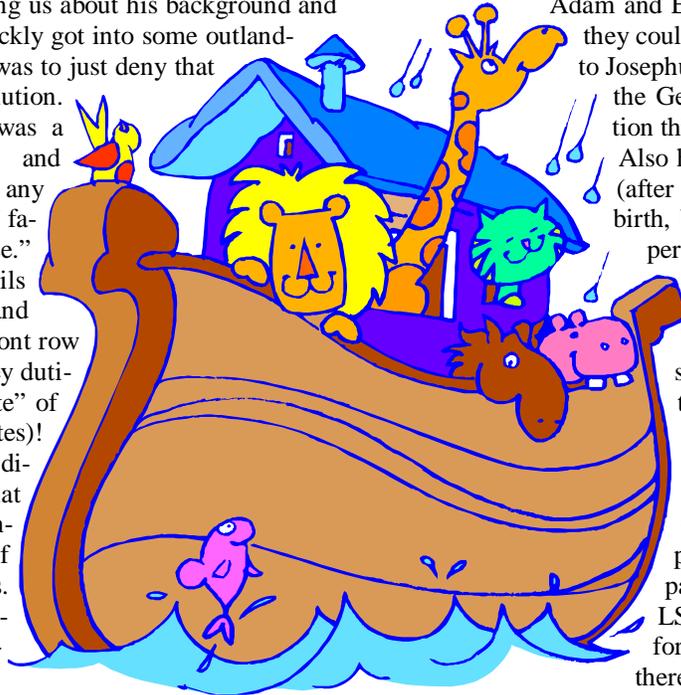
Also he spent some time on "Eve's Curse" (after the Fall). It wasn't pain in childbirth, but it had something to do with the periodic ovulation of women compared to animals. It was either the discomfort of menstruation, or God's dictum (in Leviticus) that woman shouldn't have sex during menstruation or maybe it was because women had to submit to sex all year long?

Well it was a really enlightening experience to hear a real professional creation "educator" give a performance. I'm glad now that I passed up on the opportunity to take LSD back in the 60s and saved myself for this. It seemed that all the people there, including the ministers, were in la

la land, but of course I can't be sure—there might have been a few other sane souls there. It doesn't speak well for Mason county but Sangamon probably has about as many deluded souls.

Two days later I went to the library to hear the "not-milk man" tell us about the health benefits of getting away from dairy products and becoming vegetarians. This talk stayed well within the bounds of science although one could probably argue with him about the importance and interpretation of some evidence he gave. It is refreshing to know that such a debate could have occurred without trying to get people away from a literal interpretation of a mythology thousands of years old.

After writing up this report, I found Bob Ladendorf's article on a Sattler talk in Springfield a couple of years ago in the March 2000 issue of *The REALL News*. Our experience was very similar. However, the most memorable part of the talk for me (not mentioned by Bob) was the Noah's ark material. When a creationist gets down to specifics the ridiculousness of the whole effort becomes apparent. At this point creationism should be most vulnerable to scientific criticism since they want to call it science. ♣



(*"Physics of ESP" continued from page 3*)

special configuration or complexity of matter could modulate a gravitational signal because all that matters is the size of an object and amount of stuff it is made from. Replace any object's atoms with an equivalent mass and distribution of any other type of atom and gravity will be essentially the same. Therefore, a human brain and a lump of coal both with the same mass and density will have identical gravitational fields.

Of the fundamental forces of nature only electromagnetism (EM) now remains to be considered. On the surface it seems promising. Unlike gravity, weakness is not a problem for EM since it is far more powerful, approximately 1040 times stronger. What else has science determined about this force? Primarily it keeps atoms together by insuring that the negative electrons orbit the positive nucleus. Consequently all the laws of chemistry can be attributed to this force. Additionally, whenever you touch anything it is the electromagnetic force that prevents your hand from simply moving through it. The negative electrons of your hand are repelling the like charges in a door-knob, for example.

A pure manifestation of the electromagnetic force that we are all familiar with is electromagnetism. As its name implies it is an alternating wave of electricity and magnetism moving through space. Since a moving electric charge produces a magnetic field and a changing magnetic field produces an electric field, it is self-propagating and goes on its merry way regardless of what happens to the source that created it. Many of the stars we see at night have long been dead but its light has no knowledge of this. We know this radiation as light but the visible light we see is only a small slice of the entire electromagnetic spectrum, which ranges from long wavelength, low energy radio waves, to short wavelength, high energy gamma waves. Electrons produce photons of light whenever they move from an outer orbit around the nucleus to an inner orbit, thus shedding excess energy. Since the virtual particle associated with EM, the photon, is massless, it has an unlimited range like gravity and will not stop until it is absorbed by another atom that exists, for example, in the earth's atmosphere or an astronomer's eye.

Finally we have a force that is long range and strong enough to move useful information from one place to another. Additionally, the human brain itself seems amenable to this radiation since thought itself consists of moving electric current, which is precisely what creates electromagnetic radiation. Unfortunately (you knew this was coming) electromagnetism does not fit the bill as a carrier of ESP information either. Most claims for ESP require distance effects that do not fit with the inverse square law of radiation that light always obeys. This law states that if the distance between two objects double, then the energy being received is only 1/4 its initial intensity; multiply distance by 3, then you have to divide energy by 3 squared, or 9. This has special significance for the weak fields (brain waves) that are produced by the brain, and therefore for ESP. For a field to affect the brain, enough energy must be transported and it must interact strongly enough so that the signal can be received. Eventually (and over a relatively short distance) the electromagnetic energy produced by the brain would be so attenuated that it would take hours to transmit a single thought. This does not even address all the interference caused

by the ubiquitous electrical devices in our lives. Our skulls also filter out most of the electromagnetic fields produced by our brains (as would the skulls of any potential receivers of an EM signal).

The primary drawback, however, to the hypothesis of electromagnetic radiation as the carrier of ESP signals is that such signals would be easily detected by modern instrumentation. We have been virtual masters of electromagnetism for decades now, routinely receiving radio waves on our radios, creating x-rays for medical diagnosis, and interpreting every slice of the EM spectrum coming from space that our atmosphere does not filter out. Our knowledge of the different manifestations of light and how they are produced has ballooned along with our understanding of astronomy, physics, optics and a host of other sciences. The concomitant increase in sophistication and precision of the tools we use has given us an unprecedented ability to detect and study these ephemeral waves. Whether people could produce or detect electromagnetic ESP waves is actually beside the point since our ability to precisely detect and examine them would be in the hands of these very sensitive instruments. It is not unreasonable to assume that any force that could create a chemical or electrical reaction in our neurons would be detectable – in fact it is a virtual certainty. The fact that electromagnetic radiation associated with ESP has not been detected strongly points toward the conclusion that it does not exist.

It is true that our brains do generate an electrical field which can be detected. This technique is called electroencephalography (EEG), and is used as a diagnostic tool. The electrical field produced by our brains is very weak, however, and only the largest fields make it through our skulls and can be detected by electrodes placed on the scalp surface, where the field is measured in microvolts, millionths of volts.

For these electrical fields to then cross even a few feet of space, then penetrate a potential receiver's skull, they would be attenuated further by many orders of magnitude. The electrical field produced by our brain, therefore, is insignificant in strength at a potential receiver's brain, and is therefore too weak to produce any electrical effect that could manifest as ESP. This tiny electrical field is also overwhelmed by the copious other electrical fields produced by our muscle activity, our heart, and other natural sources, not to mention the now ubiquitous electronic equipment that fill our living space.

Our brains also produce a measurable magnetic field, measured by a technique known as magnetoencephalography (MEG). This magnetic field, however, is many times weaker than the electrical field, and is therefore even less capable of producing an effect in another's brain. What our brains do not produce, however, is electromagnetic radiation, such as radio waves. As mentioned, any sufficiently strong signal would have easily been detected by now.

Many people blithely dismiss the discussion above stating that it does not matter, that there is probably another force we don't know about that can account for ESP. Assuming there is a force in nature that we know nothing about, we can still make some intelligent assessments about characteristics it should have, given what we know about forces in general and the anecdotal accounts concerning ESP. As stated in the previous paragraph, it is fair to assume that ESP would induce some neuro-

(*"Physics of ESP" continued on page 7*)

90% of a Brain is a Terrible Thing to Waste

by Steven Novella, MD

The worst misconceptions are those which everyone knows to be true, and yet are completely false. Once a false idea gets into the public consciousness, however, they are very difficult to expunge, and rarely go away completely. This article examines one of the most common myths and misconceptions in our society.

The average person uses only 10-12% of their brain. Almost everyone has heard this statement of fact in one context or another, and most people, in accordance with human nature, accept this as just another amazing but true pronouncement of science without too much scrutiny. References to this "fact" are numerous in the popular culture, from ads to movies.

The appeal of this idea is clear. If we humans only use a small percentage of our brains, then all of us possess vast untapped potential, just waiting to be used. What incredible and mysterious abilities might be hiding in the supposed unused 90% of our brains? New-agers have capitalized on this false idea as a justification for belief in ESP or other supernatural mental powers.

The history of the belief is more obscure. It is not clear exactly where the 10% figure came from, but it is about 100 years old. At no point did neuroscientists ever believe or even speculate that humans used such a small fraction of their brains. About the same time the 10% figure first appears, however, the brain was being mapped for the first time, with specific neurological and mental functions being localized to specific structures within the brain. At one point it was noted that about 10% of the human brain had been mapped out in this fashion, and perhaps this statement was misinterpreted to mean that the other 90% had no mundane function.

The evidence against this belief, regardless of its origin or psychological appeal, is conclusive. First, in the past hundred years the brain has been thoroughly mapped out. One classic technique for brain mapping was to carefully examine patients who had suffered strokes, then, upon their death, examine their brain to see which structure had been damaged. If the patient could not speak, for example, and on autopsy it was discovered that his left temporal lobe was injured by the stroke, then the left temporal lobe was believed to be the center for language in the brain. Other techniques, including animal studies and later electroencephalography (brain wave analysis), blood flow studies, and anatomical imaging were used. Today the most sensitive technique is functional MRI (magnetic resonance imaging). With this technique the metabolic activity of the brain can be imaged from moment to moment. When a subject is asked to perform a mathematical calculation, for example, the fMRI image will show the calculation

center of the brain light up with activity.

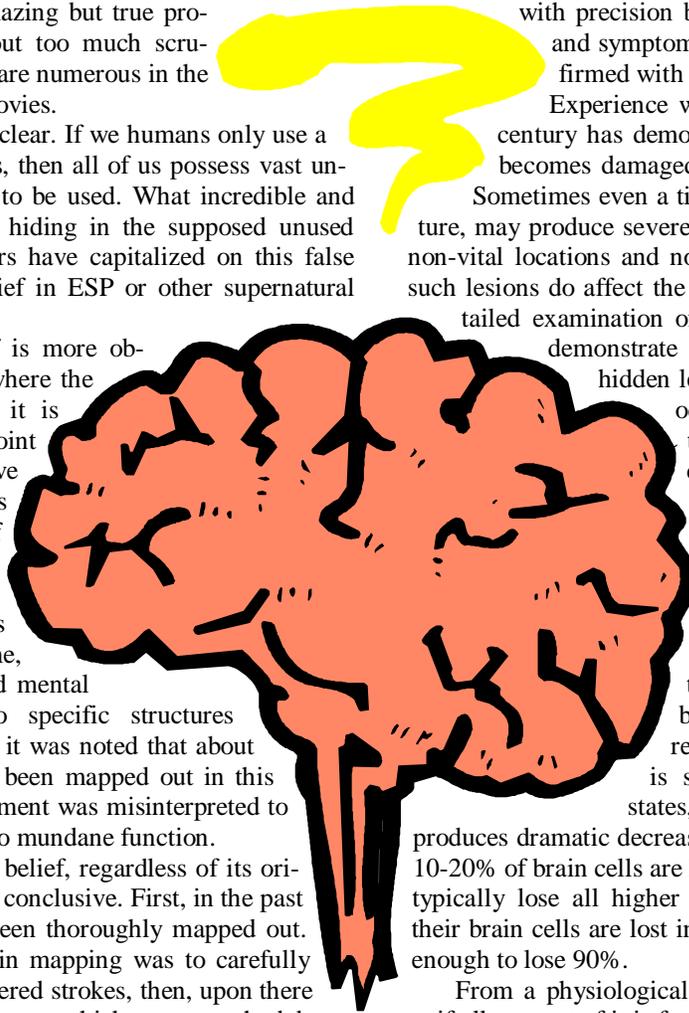
Today the entire brain is mapped in extensive detail, and a specific function has been found for each part of the brain. Most brain functions are lateralized, meaning that they exist on only one side of the brain. The notable exception to this is the frontal lobes, which possess many redundant structures. Neuroanatomy is a highly advanced discipline, to the extent that the complex connections within the brain, between its various structures, have also been mapped out in detail. For this reason clinical neurologists can often localize a lesion within the brain with precision based solely upon a patient's deficits and symptoms. Such localization can then be confirmed with detailed imaging, such as with MRI.

Experience with numerous patients over the past century has demonstrated that if any part of the brain becomes damaged a specific deficit will be produced. Sometimes even a tiny lesion, if it occurs in a vital structure, may produce severe deficits. Small lesions may occur in non-vital locations and not produce noticeable symptoms, but such lesions do affect the overall functioning of the brain. Detailed examination of the higher cognitive functions can demonstrate subtle deficits from these otherwise hidden lesions. Also, if many of these lesions occur, then cognition can be impaired to the point of producing a severe dementia. If 90% of the brain were damaged, any 90%, a person would be in a comatose state, unable to muster the brain power even to produce consciousness.

What if brain cells were destroyed in a diffuse manner, so that the structures of the brain were all preserved but the overall number of cells were reduced? This type of damage, which is seen in certain degenerative disease states, such as Alzheimer's disease, also produces dramatic decreases in brain function, even when only 10-20% of brain cells are lost. Patients with these diseases will typically lose all higher neurological function when 50% of their brain cells are lost in this manner, and don't survive long enough to lose 90%.

From a physiological perspective, the brain certainly acts as if all or most of it is functioning, even in everyday operation. The brain is a hungry organ, comprising 5% of total body mass but consuming 20% of the oxygen and glucose used by the body. Modern techniques to measure the blood flow to each part of the brain, the consumption of glucose, and the electrical activity of the brain, demonstrate that the entire brain has a certain baseline metabolic rate in the quiet awake state. When specific mental tasks are undertaken, certain parts of the brain will kick into high gear and increase their metabolic functioning.

From an evolutionary point of view, the concept also poses severe conceptual problems. Why, for example, would a species evolve a large, hungry organ and then only use 10% of its ca-



capacity. The large human brain also comes at a high cost, primarily increased difficulty in delivery. This problem led to shorter gestations, meaning that humans are born earlier and more helpless than would otherwise be necessary. It also led to changes in the female pelvis with a consequent decrease in the efficiency of female bipedalism. A large brain could not be selected for by evolutionary forces unless these disadvantages were more than outweighed by specific survival benefits. Certainly, evolution would not select for only a 10% efficiency in such an expensive and vital organ.

By multiple independent lines of reasoning it is clear that humans typically use most of their brain for normal functioning. The 10% fallacy, however, seems to be deeply ingrained in the culture and is likely to persist even beyond the publication of this humble expose.

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(“Physics of ESP” continued from page 5)

chemical change in the human brain for us to notice it. This requires energy, energy that would be detectable even by instruments your great-grandfather had available to him.

It appears that the fundamental forces of nature can offer us no solace in our desire to believe in extra sensory perception. Either the force is too short-ranged, too small, or too weak. Any force that does have the strength and range to carry a signal from one brain to another would be easy to detect with instruments that should respond to the same forces as our brain cells. This fact, coupled with the undeniable inability to produce an ESP experiment that is reproducible and widely accepted, even after a century of trying, should put to rest any debate about this phenomenon. Unfortunately, I would be utterly amazed if it did.

Part II of this article will discuss other possible forces, quantum mechanical support for ESP, and what human physiology has to say.

This article originally appeared in The New England Journal of Skepticism, Vol. 1 Issue 4, and is reprinted with permission. ♡

(“From the Chairman” continued from page 2)

kits for elementary schoolchildren. Come hear how science is taught in our schools and why science kits are important to that learning.

I know every meeting I say I’d like to see a good turnout, but I think this one especially deserves our best attendance possible. It’s all well and good to fight against psychics and creationists, but if we can help educate our children about science when they are young, they will be less likely to fall prey to such nonsense when they get older. I truly hope to see everybody there. Tuesday, May 7, 7:00, in the Carnegie South Room of the Lincoln Public Library.

REALL In the News

Even with what I’ve said above, all too often we do indeed have to play the role of the critic. REALL was contacted by the CBS affiliate out of Milwaukee, Wisconsin. They were looking for a skeptic to interview for a news segment on psychics to follow the TV movie loosely based on James Van Praagh’s supposed life story. However, while the TV movie was all for the reality of psychic powers, this segment was supposed to take a more skeptical look.

I was unable to find anybody in Milwaukee who could provide the interview, and as I talked and e-mailed with Beth Bennett, the reporter working on the segment, she decided that even though I’m rather far from Milwaukee, she wanted to interview me. Part of this was because she saw my articles on the post-9/11 actions of some of the “psychics” and wanted to include that.

But she didn’t have to come all the way to Springfield. As luck would have it, I had to be in Joliet for work for a few days. So during my off hours, she came down to do the interview (still a bit of a trip, but much better than coming all the way down here). We talked about psychics, how they do what they do, how they take advantage of people, etc. They got a long

shot of the horrible, tasteless flyer sent to me by the “Psychic Twins” showing them standing, smiling, in front of the World Trade Center as the second plane was about to hit with large letters bellowing how they predicted it. (If you were at my talk on the subject, you saw it; if not, words cannot do it justice.)

Unfortunately, as of now I can’t find anybody who might have taped it, and I’m unsure if I’ll get a copy of the segment. We talked for over a half hour, but the entire segment was only to be two-and-a-half minutes. Hopefully, the segment was as skeptical as Ms. Bennett seemed to be. If anybody has any friends in Milwaukee, ask if they saw it, and let me know!

Sad News

On a sad note, I have to report that I recently found out that skeptics worldwide lost a valuable member of the community in October of last year (yeah, the news was a bit slow in reaching me). Milton Rothman died after a lengthy illness.

Rothman’s is not a name most of you will probably recognize. But he was a physicist, teacher, and author. His relationship to REALL is that my review of his book, *The Science Gap: Dispelling the Myths and Understanding the Reality of Science*, appeared in the very first issue of this newsletter. Each of 16 chapters tackled a different myth relating to science, such as: “Nothing is known for sure,” “Nothing is impossible,” “All theories are equal,” and, of course, “Myths are just harmless fun and good for the soul.” In his introduction, Rothman explained his reasons for debunking these and other myths: “We seldom change the minds of the believers, but we hope to educate those who are not quite convinced—especially students.”

He emphasized how scientific theories must work, discussed the physical impossibilities of many paranormal claims, and looks at whether there might be hidden forces that can account for so many “powers” we see discussed.

I still consider this book a must-read, and am saddened that we will see nothing further from Milton Rothman. ♡

Our Next Meeting

Springfield Public Schools Foundation's Science Kit Fundraising Effort

To help in the goal of promoting science and education, REALL will be hosting representatives from the Springfield school district and the Springfield Public Schools Foundation to discuss science standards and fundraising efforts to buy science kits for elementary schoolchildren. Come hear how science is taught in our schools and why science kits are important to that learning.



Springfield, Illinois
Lincoln Library (7th & Capitol)
Tuesday, May 7, 7:00 PM

Free and Open
to the Public

www.reall.org

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