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EdgeScience

Current Research and Insights

The Tunguska Event

Maybe It Wasn't What We Thought

by Vladimir Rubtsov

Also:

Larry Dossey on Malcom Gladwell

Dick Blasband on Simon Singh

Jim DeMeo on Wilhelm Reich

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Why EdgeScience? Because, contrary to public perception, scientific knowledge is still full of unknowns. What remains to be discovered—what we don't know—very likely dwarfs what we do know. And what we think we know may not be entirely correct or fully understood. Anomalies, which researchers tend to sweep under the rug, should be actively pursued as clues to potential breakthroughs and new directions in science.

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The Society for Scientific Exploration (SSE) is a professional organization of scientists and scholars who study unusual and unexplained phenomena. The primary goal of the Society is to provide a professional forum for presentations, criticism, and debate concerning topics which are for various reasons ignored or studied inadequately within mainstream science. A secondary goal is to promote improved understanding of those factors that unnecessarily limit the scope of scientific inquiry, such as sociological constraints, restrictive world views, hidden theoretical assumptions, and the temptation to convert prevailing theory into prevailing dogma. Topics under investigation cover a wide spectrum. At one end are apparent anomalies in well established disciplines. At the other, we find paradoxical phenomena that belong to no established discipline and therefore may offer the greatest potential for scientific advance and the expansion of human knowledge. The SSE was founded in 1982 and has approximately 800 members in 45 countries worldwide. The Society also publishes the peer-reviewed *Journal of Scientific Exploration*, and holds annual meetings in the U.S. and biennial meetings in Europe. Associate and student memberships are available to the public. To join the Society, or for more information, visit the website at scientificexploration.org.

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CONTENTS

3

THE OBSERVATORY

Trusting the Observer: A Neglected Factor

Richard Blasband

4

NEWS NOTEBOOK

Lucy Tech, Human Evolution and Disease, Violent Dreams

FEATURES

5

The Tunguska Event: Maybe It Wasn't What We Thought

Vladimir Rubtsov

11

Following the Red Thread of Wilhelm Reich: A Personal Adventure

James DeMeo

18

REFERENCE POINT

Dossey to Gladwell: Wake Up and Smell the Presentiment

A review by Larry Dossey of Malcom Gladwell's *Blink: The Power of Thinking Without Thinking*

20

BACKSCATTER

The Embattled Maverick Scientist

ERRATA

René Verreault in his article "Swinging Anomalies" in *EdgeScience 4* misattributed a study of the properties of light to physicist Chris P. Duif of Delft University of Technology in the Netherlands. Our apologies. The work was conducted by Roland De Witte in Brussels. The sentence should read: "Independent research on the properties of light conducted in 1991 by Roland De Witte in Brussels shows that there is no experimental justification for postulating the speed of light as a universal constant."



Cover painting © William K. Hartmann, Planetary Science Institute. View from Vanavara trading post, 60 km south of the Tunguska event, at the moment of the explosion, based on Russian reports. A man sitting on the porch was blown off the porch by the shock wave from the explosion.

By Richard Blasband

Trusting the Observer: A Neglected Factor

Simon Singh is a British science writer of such books as *Big Bang*, *Fermat's Enigma*, and *Trick or Treatment*, a co-authored examination of alternative medicine. When Singh wrote an article for *The Guardian* taking chiropractic practice to task for allegedly outrageous claims, he was sued for libel by the British Chiropractic Association. Singh fought the case in court and prevailed, in the process becoming something of a hero to those challenging the pseudoscience community.

In a recent interview entitled “Author Simon Singh Puts Up a Fight in the War on Science,” published in the September 2010 issue of *Wired*, Singh asks for the acceptance of establishment science by “trust” in their education, training, experience, and greater numbers. Indeed, there is much that can be said for these things in gaining our trust. However, as important as these factors are, those bearing them can well be wrong in their conclusions. If the fundamental assumptions on which a case is based are wrong then it doesn't make any difference how many examples are given to support one's conclusions. The corollary is that if only one example is given based upon a correct fundamental premise, then the conclusion is likely to be truthful. The issue, then, is how do we know which originating premises are correct?

Science tries to ascertain this by the two-step of hypothesis based on observation followed by a testing of the hypothesis. One then rejects or refines one's hypothesis, tests some more, and so on. There is an assumption here that is rarely mentioned, at least rarely until most recently, and that is the clarity of the observer who makes the initial observation.

Until now it has been assumed that we are all equally clear in our unadulterated and transparent sensory perception and apprehension of the external world and that our intentions have nothing or little to do with the outcome of not only our observations but the testing of our hypotheses. We now know that this is not true. Indeed, there is ample evidence from depth psychology that our character structure determined by innumerable thwartings of our life force in our growth and development can so “armor” us that we literally perceive the world in a distorted form.* And there is sufficient evidence from quantum research to demonstrate how dependent the results of particle/wave experiments are on the intention of the observer, not to mention the seminal work of the PEAR laboratory of the profound effects of intention on the behavior of machines whose output is random.

My personal experience as a depth therapist of over 45 years of experience working with men and women of all ages from infancy to well past middle age, from all professional walks of life, is that all of my clients living into their 20s have significant amounts of psychophysical armoring and demonstrate significant and varying degrees of perceptual distortion and distortion of thinking depending upon where in their organism they are armored. If the eyes and brain are affected, for

example, and they are to some degree in everyone, visual clarity and thought will be also. Release of the armoring through appropriate emotional expression results, by the client's own admission, in significant recovery of vision, three dimensional imaging, and loss of confusion in those we would deem as schizophrenic. In those with lesser disturbances there is always an increased clarity of thought. It is a dynamic process.

While, admittedly, my professional clientele represent a small population, they do not come to me with very serious problems: that is, they appear to be fairly representative examples of the Western population as a whole. Except that they are so aware of the disparity between what they are and what they could be that they seek my help. My point here is that there is good reason for believing that the armored state is our collective state and that there is little true objectivity not only in us, and in our apprehension of external reality (which we also create), but by extension, so it is among our scientists.

If this is true, and I believe it is, then what we think is real is not real, but is some compromised reality and the fundamental premises on which we base our initial hypotheses are not correct. From this point-of-view mainstream and alternative medical science are both flawed: It is no wonder that definitive cures are not available from either camp.

Singh can fight *ad infinitum* for the former, but even if we stand on his turf we wonder if he knows that only 15% of the medications in the standard approved pharmacopeia have undergone the double-blinded gold standard of testing. The same, of course, goes for alternative medications. Singh and the chiropractors and their descendants can and will continue to duke it out, but as long as it takes place on insubstantial and wobbling ground, little of substantial value will be learned.

* Blasband, R.A. “Emotional Armoring as a Filter of Consciousness,” *Filters and Reflections*, Edited by Jones, Z., Dunne, B. Hoeger, E., and Jahn R. ICRL Press, 2009

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Lucy Tech: The Oldest Use of Tools?



Photo credit: Dikika Research Project

In cosmic terms a million years is the proverbial drop in the bucket. But in terms of the earliest evidence for the use of stone tools among our ancestors, a million years is enough to seriously upset the mainstream appletart. Shannon McPherron, an archeologist with the Dikika Research Project in northeastern Ethiopia and research scientist at the Max Planck Institute in Leipzig, Germany, and her team of researchers have found large fossilized animal bones with cut marks apparently made with sharp stone tools, according to research published in the August 12, 2010 issue of *Nature*.

The bones, whose ends were shattered apparently for sucking out marrow, were discovered within walking distance of a previously uncovered *Australopithecus afarensis* skeleton. The bones have been dated at 3.4 million years old, pushing back the earliest evidence for using stone tools by nearly a million years, or 800,000 years to be precise. The previous earliest stone tool find, also from Ethiopia, was attributed to *Australopithecus garhi* about 2.6 million years ago.

The Dikika researchers found two cut bones: a rib from a buffalo-sized animal and a femur shaft from an impala-sized animal. An analysis indicates that the cuts were created before the bones fossilized and are therefore not recent. And given the lack of suitable rock material in the area where the bones were found, the researchers do not believe that naturally sharp rocks were used to make the cuts but that the tools were actually created. All of which suggests they walked around carrying their tools, which completely transforms the portrait that science has of our Lucy-like ancestor.

The finding has set off a storm of controversy with critics quickly pointing out, quite correctly, that no sharp-edged flaked stones have been recovered from the site. At least, not yet.

Is Human Evolution Heading Towards or Away From Disease Susceptibility?

Evolution should not, in theory, be out to get us, but a recent study conducted by Atul Butte and colleagues at the Stanford University School of Medicine shows that this is still an open question. They found that of 80 DNA variants associated with type-1 diabetes (“juvenile diabetes”) that have undergone positive selection, that is increasing in prevalence, over recent generations, 58 of the variants increase the risk of the deadly disease.

“At first we were completely shocked,” said Butte, whose research was published online at *PLoS ONE* in August 2010, “because, without insulin treatment, type-1 diabetes will kill you as a child. Everything we’ve been taught about evolution would indicate that we should be evolving away from developing it. But instead, we’ve been evolving toward it. Why would we have a genetic variant that predisposes us to a deadly condition?”

The positive selection of genes and traits should work to maximize the chance of survival for our species, so the genes associated with greater diabetes risk must be conferring some unknown benefit. Could disease-causing genes be beneficial? The idea is not a new one.

One possibility is that the genetic variants that increase diabetes risk could also be decreasing the risk of certain viral or bacterial infections. This mutation could have had large benefits in areas where infectious diseases ran rampant, and the risks of dying young from these mostly untreatable illnesses was far greater than the danger of juvenile diabetes. The researchers also speculate that the variations that increase diabetes risk might also be passed on simply because they reside on the same stretch of DNA as the more beneficial mutations.

The topic obviously needs much more research, but at the moment it remains a mystery.



Credit: ozgurdonmaz/istockphoto

Enough to Give H.P. Lovecraft Violent Dreams

Violent dreams may be an early warning sign of neurodegenerative diseases, including Parkinson’s disease. How early? Decades before a patient is diagnosed, according to neurologist

Vladimir Rubtsov

The Tunguska Event: Maybe It Wasn't What We Thought

What is Tunguska? This is a region in Central Siberia, where there are several rivers, all tributaries of the Yenisey, with this word in their names. But this is also a short designation for one of the most enigmatic events of the 20th century: the flight and explosion of a cosmic body of unknown nature. From the remaining material traces, instrumental records, and eyewitness reports we know that on the morning of June 30, 1908, there occurred in this region a powerful high-altitude explosion. It happened over the so-called Southern swamp, a small morass not far from the Podkamennaya Tunguska River. The site's coordinates are 60° 53'N & 101° 54'E. The explosion devastated about 2,150 km² of the taiga, flattening some 30 million trees. Vegetation was burnt over an area of 200 km², which seems to be indicative of a powerful flash of light.



Before the explosion, local inhabitants saw a luminous body flying through a cloudless sky. Many settlements in the region saw it, as its flight was accompanied by thunderous sounds. Some years later, this body was designated “the Tunguska meteorite.”

Whether or not this was a meteorite in the strict sense of this word remains unknown. It would therefore be more correct to call it the “Tunguska space body” (TSB). The time of the Tunguska explosion has been determined with an accuracy of 10 sec. It occurred at 0 h 13 min 35 sec (± 5 sec) GMT (Pasechnik, 1986). The altitude of the explosion has not been determined with such accuracy, but it is generally agreed that it took place from 5 to 8 km above the ground. As for the total energy released at Tunguska, here the discrepancy between various estimations reaches almost two orders of magnitude:

Scorer 1950: 90 megatons (Mt) of TNT

Martin 1966: ~50 Mt

Posey & Pierce 1971: 50 Mt

Pasechnik 1986: 30 to 50 Mt

Bronshthen 1969: 30 Mt

Ben-Menachem 1975: 10 to 15 Mt

Zolotov 1969: 10 Mt



Photo by Vladimir Rubtsov.

The Southern swamp. View from a helicopter.

Levin & Bronshthen 1985: 10 Mt

Korobeynikov et al. 1974: 9.5 Mt

Boslough & Crawford 2007: 3.6 Mt

Since 1927 many hypotheses have been advanced to explain the Tunguska event:

1. A huge iron meteorite broke into pieces high above the Earth's surface. Large chunks of the meteorite and “a fiery jet of burning-hot gases” struck the surface and leveled the trees (Kulik, 1927).
2. The impact of a huge iron or stony meteorite (Krinov, 1949).
3. The forest devastation in the Tunguska taiga was caused by the bow wave that accompanied the meteorite through the atmosphere and hit the ground after air resistance disrupted the meteorite (Tsikulin & Rodionov, 1959).
4. Thermal explosion of the icy core of a comet (Krinov, 1960).
5. A lump of “space snow” of extremely low density that completely collapsed in the atmosphere. Its bow wave leveled the taiga (Petrov & Stulov, 1975).
6. The fast fragmentation of a stony asteroid or a comet core (Grigoryan, 1976).
7. Low-altitude airburst of a swiftly moving stony asteroid (Boslough & Crawford, 2007).
8. Chemical explosion of a comet core (Tsynbal & Schmitke, 1986).
9. Chemical explosion of a fragment of Comet Encke that was caught by the gravitational field of the Earth and made

three revolutions around it, after which it entered the atmosphere and evaporated, forming an explosive cloud over Tunguska. Then the cloud detonated (Nikolsky, Schultz & Medvedev, 2008).

10. Annihilation of a meteorite consisting of antimatter (La Paz, 1948).
11. Natural thermonuclear explosion of a comet core (D'Allesio & Harms, 1989).
12. Nuclear explosion of an alien spacecraft (Kazantsev, 1946).

The primary problem with the conventional interpretation of the Tunguska event is that there is no trace of either asteroidal or cometary material at the site of the explosion. Usually, authors of Tunguska hypotheses pay careful attention to this fact and try to build a mechanism to explain it, with varying degrees of success. But there is also a serious methodological problem that is generally overlooked: the need to take into consideration *all* empirical data and *to reconstruct the Tunguska event* before building any models of it. Such a reconstruction is essential since the consequences of this event are many and varied. Meanwhile, more often than not, only some of the general characteristics of the leveled forest area (and less often, those of the zone of the light burn) are taken into consideration when trying to find an explanation for the Tunguska event.

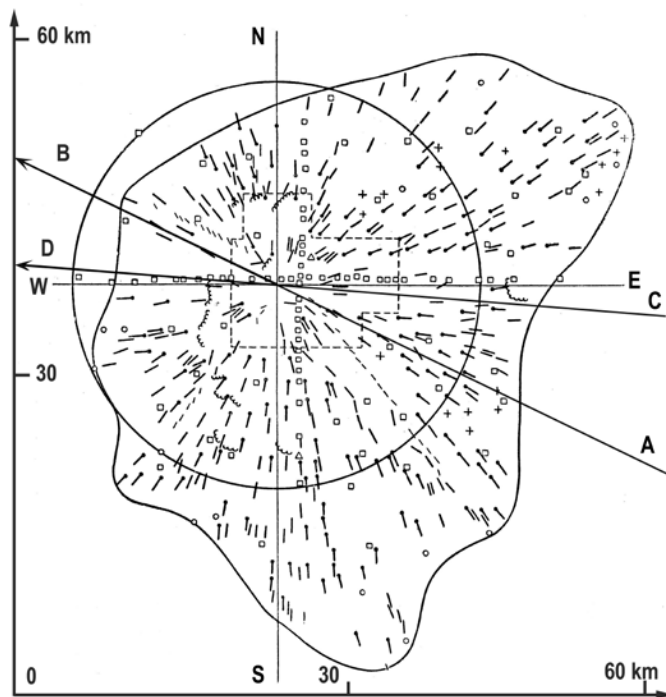
There are, however, other traces of this event that should not be ignored. The main Tunguska traces may be categorized as follows:

- A. Material traces
- B. Instrumental traces
- C. Informational traces

Certainly, while the material and instrumental traces provide the primary evidence, the Tunguska eyewitness reports should not be ignored. “If we are trying to unveil the real Tunguska mystery, and not just solve an abstract mathematical problem, we must reject those solutions which are inconsistent with observational data” (Bronshen, 1980). These reports can be considered as boundary conditions for the “Tunguska theories.” A theoretical model that goes beyond these boundaries cannot have anything to do with the real Tunguska phenomenon. And only when all the three types of Tunguska evidence jointly corroborate a theory can the researcher be sure that he is building the correct picture of the phenomenon.

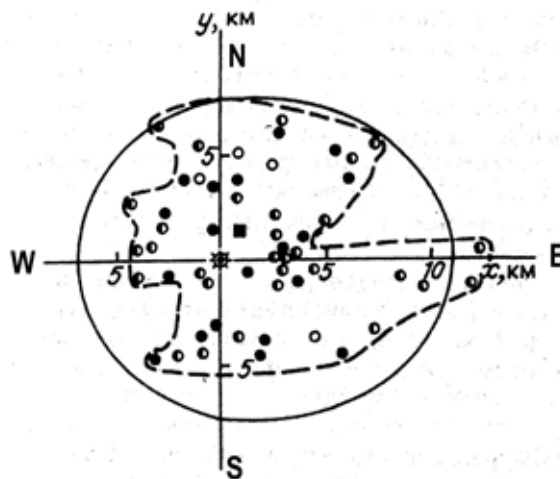
A. Material Traces

1. The trees were leveled over a butterfly-like area 70 km across and 55 km long, with its axis of symmetry running at an angle of 115° to the east from its geographical meridian. It seems natural to suppose that along this line the Tunguska space body had been moving in the final stage of its flight. Over this area, trees were found lying mainly in a radial direction, although there were some noticeable departures from this pattern. The pattern of destruction is quite complicated, suggestive of the effects of both a blast wave and *two* bow



waves (the latter being considerably less powerful than the former). From this we can deduce that there were *two* bodies over Tunguska, one flying from the east-southeast to the west-northwest (line AB), while the second travelled nearly from east to west (line CD).

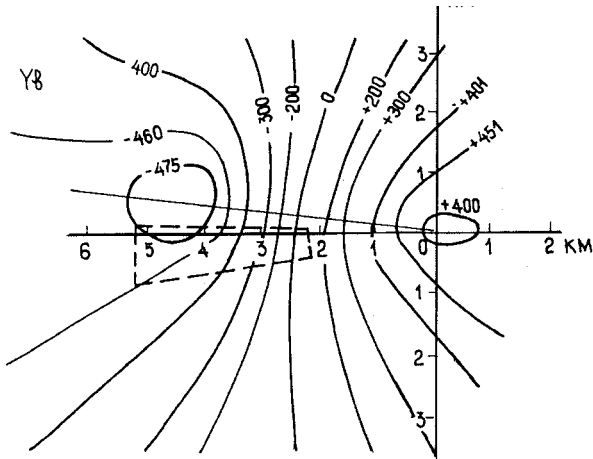
Quite remarkably, there is an area of about 8 km in diameter at the epicenter of the explosion, where trees were scorched and devoid of branches, but remained standing upright like telegraph poles. The “telegraph-pole” phenomenon points to the effect of a blast wave with its origin at a height of several kilometers. Also, a trace of the bow wave in the leveled forest extends westward beyond the epicentral zone, which can mean that a fairly massive body flew westward *after* the explosion.



2. The zone of the light burnt trees also forms a “butterfly-like” shape, its axis of symmetry running from east to west. It extends up to 16 km to the east from the epicenter, with two separate zones being clearly noticeable within it: the zone

of intense burns and the zone of weak burns. In theory, traces of severe burning should be present at the center of this figure while those of weak burning should be at its periphery. But in reality the picture looks much stranger: the zone of weak burning extends from the east into the zone of severe burning, and along the axis of symmetry the burning is considerably weaker than that which occurred at a distance from it. At the very center of the figure, however, there is evidence of the maximum level of the light flash.

Also, the light-burned vegetation is arranged in patches; there are areas seriously damaged, and intermittent areas free from any thermal influence. Clearly, the light flash was very uneven. The intricate inner structure of the zone of thermal burn also testifies to this notion. And last but not least, even at the epicenter of the Tunguska explosion some trees belonging to species highly sensitive to overheating—such as cedar and birch—have somehow survived.



Pattern of ytterbium's distribution at Tunguska following the projection of the TSB trajectory on the ground (Zhuravlev & Zigel, 1998).

3. Some local geochemical anomalies were discovered at the epicenter of the Tunguska explosion. Substantial shifts in isotopic compositions of carbon, hydrogen, and lead were found. The soil is also enriched with rare earths (samarium, europium, terbium, ytterbium, etc), as well as with barium, cobalt, copper, titanium, and other elements (Dmitriev & Zhuravlev, 1984; Vasilyev, 1995). The ratio of rare earth elements had been sharply disrupted. Particularly, the content of terbium is 55 times greater than the norm, thulium by 130 times, europium by 150 times, and ytterbium by 800 times. These results may indicate that the TSB contained some appreciable quantities of superconducting high-temperature ceramic made by combining three elements: barium, a lanthanide, and copper (Dozmorov, 1999).

The surface distributions of lanthanum, lead, silver, and manganese at Tunguska display a similarly shaped pattern, but the distribution patterns of iron, nickel, cobalt, and chromium show no association with any special points or directions of the area of leveled forest, indicating that these elements were natural components of the soil and rocks. This can mean that the typical meteoritic elements—iron, nickel, cobalt—have

nothing to do with the Tunguska space body. Instead, it is primarily ytterbium that can be reliably associated with the TSB, and possibly lanthanum, lead, silver, and manganese (Zhuravlev & Demin, 1976). With this composition, it could hardly have been a meteorite or a comet core.



A section of a larch that survived the 1908 disaster. Its rings after 1908 are noticeably wider than before.

4. A complex set of serious ecological consequences has been revealed in the region of the explosion. First, the forest was restored very quickly after the catastrophe; there was accelerated growth of trees, both young and those that survived the incident (Nekrasov & Emelyanov, 1963; Emelyanov et al., 1967). Second, the local pines showed a sharp increase in frequency of mutations (Plekhanov et al., 1968; Dragavtsev et al., 1975). Both of these effects tend to concentrate towards the “corridor” of the Tunguska body flight path. As with many other anomalies in this region, the genetic impact of the phenomenon is also of patchy character. A rare mutation among the natives of the region, which arose in the 1910s in one of the settlements nearest to the epicenter, has also been discovered (Rychkov, 2000).

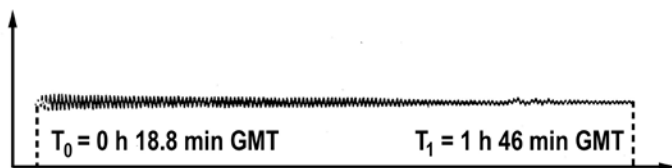
5. The presence of feeble but noticeable radioactive fallout after the Tunguska explosion has been confirmed by finding peaks of radioactivity dated 1908 in trees that had withered before 1945—the year nuclear tests in the atmosphere started and the artificial radionuclides began to fall from the sky in plenty. Only the increased radioactivity of the samples taken from the trees that continued their growth after this year can be explained as contamination from contemporary nuclear tests (Mekhedov 1967; Zolotov 1969).

6. Within 10 to 15 kilometers from the Tunguska epicenter the level of thermoluminescence (TL) of local minerals considerably exceeds the background level. The zone of increased TL has an axis of symmetry running almost directly from the east to the west. “Formerly we were calling the factor which had stimulated thermoluminescence at Tunguska somewhat too cautiously ‘unknown,’ but now it’s time to tell that we cannot see any rational alternatives to identifying this with hard radiation” (Bidyukov, 2008).

Traces 4, 5, and 6 seem to indicate that the Tunguska explosion was accompanied by hard radiation.

B. Instrumental Traces

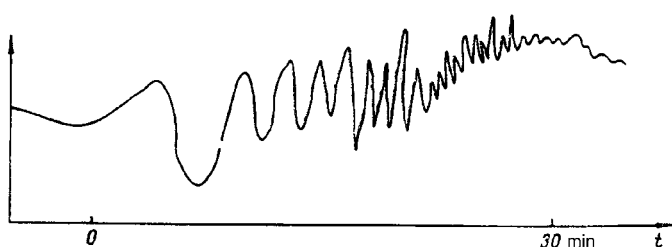
7. The Tunguska explosion left records of its seismic waves



The seismogram of the Tunguska earthquake of June 30, 1908 recorded by a seismograph of the Irkutsk Magnetographic and Meteorological Observatory.

on the seismographs in Irkutsk, Tashkent, Tbilisi, and Jena.

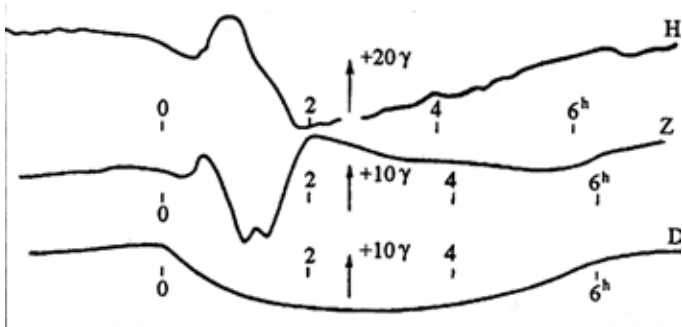
8. Barographs in Russia and in Britain also recorded the



A Tunguska microbarogram recorded in London (Whipple, 1930)

infrasonic waves produced by the TSB.

9. Minutes after the explosion a magnetic storm began



The local geomagnetic storm, dated June 30, 1908, as recorded by instruments of the Magnetographic and Meteorological Observatory at Irkutsk (Ivanov, 1961).

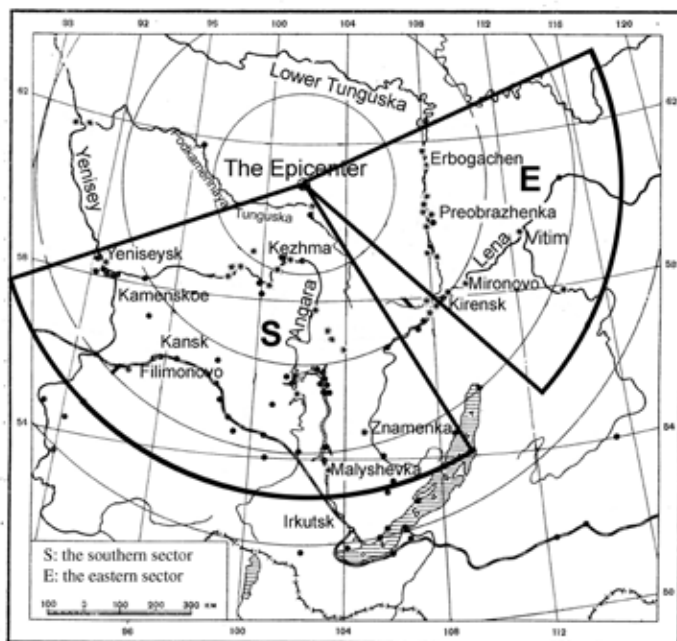
that lasted some five hours and resembles the geomagnetic disturbances seen following nuclear explosions in the atmosphere. This storm was detected by the Magnetographic and Meteorological Observatory in Irkutsk.

For seven hours before the explosion of the Tunguska space body, the geomagnetic field was very calm. At 0 h 20 min GMT, that is six minutes after this body exploded, the intensity of the geomagnetic field abruptly increased by several gammas and remained at that level for about two min-

utes. This was the initial phase of the local geomagnetic storm (called the “first entry”). Then a second phase—“the phase of rise”—began. The geomagnetic field reached its maximum intensity at 0 h 40 min GMT and remained at the same level for the next 14 minutes. It then began to drop, the amplitude decreasing by some 70 gammas. It returned to its initial undisturbed level at about 5 h 20 min GMT. *Such effects have never been observed by astronomers studying meteor phenomena.* The only events to show parallel effects were the artificial geomagnetic storms that occurred in 1958 over Johnston Island during high-altitude nuclear tests (Zhuravlev 1998).

C. Informational Traces

10. The number of eyewitness testimonies to the Tunguska event total about 700 (Vasilyev et al., 1981). The TSB was seen at a distance of up to 1000 km from the location of its explosion. The eyewitness reports came primarily from two areas (S and E).



The southern and eastern sectors, from which came reports of eyewitnesses observing the flight of the Tunguska “meteorite” (Rubtsov, 2009).

Data obtained inside each sector made it possible to create a statistically reliable and coherent description of the Tunguska phenomenon, but the sectors provide different descriptions of the event.

In the south, the phenomenon, including thunder-like sounds, lasted half an hour and more. The brightness of the TSB was comparable to the Sun. The body looked white or bluish and flew from south to north. It had a short tail of the same color. After its flight, iridescent bands resembling a rainbow and stretching along the trajectory of the body’s motion remained in the sky.

In the east, the flying body was much less bright than the Sun. It was red in color, and its shape resembled a ball or “artillery shell” with a long tail. Eyewitnesses usually described it simply as a “red fiery broom” or as a flying “red sheaf” that moved swiftly in the western direction, leaving no trace behind. The duration of this phenomenon did not exceed a few minutes.

Conclusion

The general scenario for the Tunguska event that almost all Tunguska investigators agree on is very simple: one space body flew over Central Siberia performing no maneuvers, generated in its flight a bow wave, exploded over the Southern swamp, and produced a blast wave. But when we process the eyewitness reports, we obtain, instead of an unambiguous picture of a space body arriving from a definite direction, either two bodies flying in different trajectories or one body performing various maneuvers—or a combination of the two. Furthermore, if the TSB was seen at a distance of 1,000 kilometers from the epicenter, then it was flying at a small angle with respect to the Earth’s surface. This angle could not have exceeded 10 to 15 degrees, otherwise the altitude at which the TSB began to emit light would have been too great. But in this case, the speed of the TSB before its explosion (that is, near the Southern swamp) could not have exceeded 1 to 2 km/sec, otherwise the body, flying in a flat trajectory, would have left a more pronounced trace in the leveled forest of its bow wave than it left. At this velocity, no “thermal explosion”—or any other type of explosion due purely to the kinetic energy of a moving body—is conceivable. So the TSB’s explosion must have been produced by its internal energy (chemical, nuclear, or other).

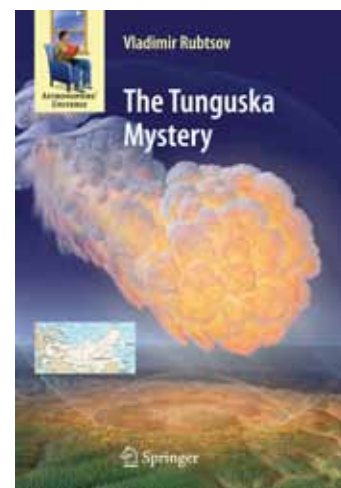
Having at our disposal all this data, we are led towards accepting Kazantsev’s “Alien Spacecraft” hypothesis as probably worthy of further consideration, even if in a modified form. It seems conceivable that in the morning of June 30, 1908, two artificial objects flew over Central Siberia and one of them exploded at Tunguska due to its internal energy. Whether this event should have been interpreted as an “aerospace combat” or as a “failed rescue operation” is a matter of conjecture. All experienced Tunguska specialists agree that this problem will be solved only when a real piece of the Tunguska space body has been found. But no matter how imposing the theory proposed for the Tunguska explosion, the only way to verify it will probably involve discovering appreciable quantities of the TSB substance in an area predicted by theory. This search has at present a good chance for success.

The pattern of ytterbium’s distribution at Tunguska has its maximum concentration at about 4 km to the west from the epicenter. It is here that in 2004 Leonid Agafonov and Victor Zhuravlev from the Siberian Branch of the Russian Academy of Sciences found several artificial metallic particles in the peat layer dated 1908. “We should not jump to conclusions from these findings. Yet we can probably hope to find in this area... a larger remnant of the Tunguska space body. There seems to be at this area a ‘geochemical halo’ surrounding the place of its fall” (Zhuravlev & Agafonov 2008).

There seems to be no simple conventional interpretation of the Tunguska catastrophe. As we know, a number of unconventional theories have been proposed. The answer may be one of these—or it may be none of them. There appears to be little doubt, however, that some strange bodies—such as, for example, the enigmatic “Remarkable Meteors” observed in echelon formation off the East Coast of Korea in 1904 (Sturrock, 2009)—do from time to time appear in the terrestrial atmosphere. Whether or not those “meteors” could have had anything to do with the Tunguska space body remains an open question.

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- (See *The Tunguska Mystery* by Vladimir V. Rubtsov for the full list of references)
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NEWS NOTEBOOK continued from page 4

Bradley Boeve of the Mayo Clinic in Rochester, Minnesota and his colleagues, whose research was published in the July 28, 2010, issue of the journal *Neurology*.

The researchers examined Mayo Clinic medical records between 2002 to 2006 to identify cases of a mysterious sleep disturbance called REM sleep behavior disorder, or RBD. The dreams in RBD often involve episodes of violent thrashing, kicks, and screams in which an attacker must be fought off. The dream-enacting behavior may end with the person injuring themselves or their bed mate. The researchers identified 27 patients who developed the RBD disorder at least 15 years and up to 50 years before being diagnosed with a neurodegenerative ailment. No other clinical manifestations are known in the neurodegenerative realm that can start so far in advance.

While the correlation appears to be a strong one, it's not clear that cause and effect have been clearly teased out. Could a debilitating sleep disorder, rather than being a symptom of a developing mental illness, be part of the cause?

A Language Worthy of Science

"Some languages, like Matses in Peru, oblige their speakers, like the finickiest of lawyers, to specify exactly how they came to know about the facts they are reporting. You cannot simply say, as in English, 'An animal passed here.' You have to specify, using a different verbal form, whether this was directly experienced (you saw the animal passing), inferred (you saw footprints), conjectured (animals generally pass there that time of day), hearsay or such. If a statement is reported with the incorrect 'evidentiality,' it is considered a lie. So if, for instance, you ask a Matses man how many wives he has, unless he can actually see his wives at that very moment, he would have to answer in the past tense and would say something like 'There were two last time I checked.' After all, given that the wives are not present, he cannot be absolutely certain that one of them hasn't died or run off with another man since he last saw them, even if this was only five minutes ago. So he cannot report it as a certain fact in the present tense. Does the need to think constantly about epistemology in such a careful and sophisticated manner inform the speakers' outlook on life or their sense of truth and causation?"

— Guy Deutscher, "Does Your Language Shape How You Think?"

The New York Times, August 29, 2010

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James DeMeo

Following the Red Thread of Wilhelm Reich: A Personal Adventure

I read Dr. Wilhelm Reich's book, *Selected Writings*, when still an undergraduate student, and found it both exciting and stunning. I could hardly put it down. The book outlined an entire set of new discoveries, ranging from the biology of sexuality, to emotions and cancer, and hence into biophysics, atmospheric science, and cosmology. With amazement, I learned his books had been banned and burned, first in Europe, then later by the U.S. Food and Drug Administration, which also engineered Reich's death in prison. This only fed my curiosity. Only scientists of historical significance suffered such a fate. His life-energy science, called *orgonomy*—after the *orgone energy* he discovered—offered so many hopeful developments for a suffering humanity. I could not rest easy without knowing for certain: Was it true? Or not? And so I followed the red thread Reich left behind, as in the myth of Ariadne in the Labyrinth, following wherever it led.

I began by obtaining photocopies of his banned and burned journal articles and books, plus articles by others, such as those published in the *Journal of Orgonomy*, which reported experiments by various MDs and PhDs from around the world that verified Reich's findings. If it was all madness, as Reich's critics claimed, then what of this large body of published empirical evidence? The critics simply ignored it.



Human-Sized Orgone Energy Accumulators Inside a Metal-Lined Orgone Darkroom at the author's high-altitude Orgone Biophysical Research Laboratory near Ashland, Oregon.

So I built his devices, including several orgone energy accumulators, using Reich's plans, and confirmed many of the subjective parameters he reported. I experienced the radiant warmth from the walls, which sensibly penetrated deep inside one's organism; the increased visual perception; and the luminous anomalies not described in any textbook. I found that it

also promoted the healing of small cuts and burns, sometimes with a speed significant enough to observe directly during treatments.



Orgone Charged Mung-Bean Seedlings (left), versus Control Seedlings (right), from a typical experimental run under optimal conditions.

Going from the subjective to the objective, I tried simple seed-sprouting experiments, charging up one group of mung beans with another control group, and observed up to a 50% increase in sprout lengths. I came into closer contact with other scientists doing the Reichian research, such as Dr. Richard Blasband. Several decades later, I would undertake more robust plant growth experiments in my laboratory near Ashland, Oregon, a location thought to be optimal for such tests—high altitude, low humidity, forested, with very low electromagnetic fields. There, I made more exacting controls over temperature, light, and humidity, yielding over several years a 38% increase in the orgone-charged seedlings over the matched controls ($p < 0.0001$). I tried Reich's other experiments, using millivoltmeters and electroscopes to document laboratory anomalies he reported, nearly all of which were reproducible. The accumulator not only enhanced biological growth but also displayed a measurable increase of electrical charge inside as compared to outside.

At one point I worked as laboratory assistant in the Blasband laboratory, caring for cancer mice in a study he was undertaking on the effects of the orgone energy accumulator. Reich's own work, as reported in *The Cancer Biopathy*, showed a three-fold increase in the lifespans of orgone-treated cancer mice, as compared to a control group. Blasband's work basically reproduced these effects, increasing orgone-charged cancer-mice lifespans from 50% to a doubling of lifespans over control groups. Other associates of Reich and later investigators showed similar positive results, extending the life of cancer

mice merely by putting them inside the orgone energy accumulator for a few hours daily.

I also assisted Dr. Blasband with several cloudbusting experiments, using his apparatus as constructed according to Reich's designs. A cloudbuster is a large antenna-like instrument that can be aimed at any point in the sky, whereupon it can alter the dynamics of clouds, to grow or shrink them using various techniques, even to the point of bringing rains during drought. On my first experience, a fully stagnant atmosphere choked with "smog" and visibility limited to one mile at best was opened up where the sky had been scanned within 15 minutes of work, as if some giant theatre curtains had parted, revealing clear blue skies and well-defined clouds. Rains came shortly thereafter. During the operations, many birds reacted to the biological field effects of the cloudbuster, flying around the apparatus with loud chirping. I also could sense its effects. It was as Reich had described some 30 years earlier.



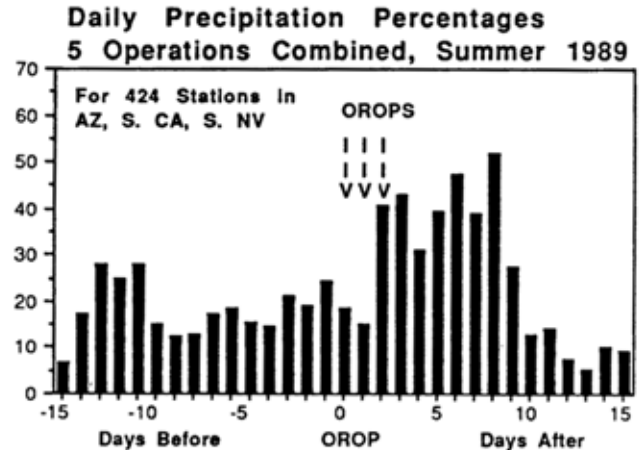
Cloudbuster *Icarus*, used in experimental trials at the University of Kansas (1977–78), and in systematic tests for rain increase in Arizona (1989). Similar apparatus was constructed overseas for successful drought-abatement experiments in Israel (1991–1992), Namibia (1992–1993), and Eritrea (1994–1999).

A year later, as a graduate student in the Geography-Meteorology Department at the University of Kansas, I undertook cloudbusting experiments for my graduate thesis, attempting to show some results—any results, in more elaborated proofs. Several of the department professors, while constructively critical, agreed to the test. The twelve cloudbusting operations I undertook to bring rain were analyzed by reviewing percent-cloud-cover and rainfall data from 278 National Weather Service weather stations in Kansas. Anomalous increases in cloud cover and significant rains developed on the days of these operations, with a persistence effect over several additional days. This was about four times more rain than on the three days immediately before operations commenced. A series of cloud-dissipation trials were also carried out on isolated cumulus clouds, which were photographed in sequence, every minute, with subsequent digital evaluation of cloud areas. After selecting and tracking a cloud with the necessary characteristics over five minutes, a coin-flip decided if the selected cloud

would be in the control group and remain untested, versus the test group affected by aiming the cloudbuster at its core. The results showed an approximate doubling of the speed of cloud-dissipation for the test group of clouds versus the control group ($p < 0.001$).

My professors were pleasantly surprised by the results. But when word of my results spread, those who felt "Reich" and "orgone" besmirched the reputation of the university unethically worked to suppress and block further research on the subject. Nevertheless, my work was formally accepted and the graduate degree program was completed. Subsequent work with the cloudbuster over the next 30 years further verified Reich's claims that his methods could bring rains even under droughty and desert conditions.

For example, a major drought-breaking operation in the southeastern United States in 1986 ended what was an historical drought of most severe conditions, and the South Carolina State Climatology Office was sufficiently impressed to include my paper on the operation in the proceedings of a conference focused upon the drought. Nobody had predicted it would end with the widespread and persisting rains that developed shortly after work with the cloudbuster had begun. This was one of the few cases where I could get my findings published, as I would later discover when a mainstream blackout descended over the subject.



An averaged *Rainfall-Doubling Effect* from Cloudbusting Experiments in Arizona, from five pre-announced dates of operations in 1989. Data aggregated from 424 National Weather Service rain-gauges. "Orops" marks the days of operations.

In 1989, a major experiment to increase rains was undertaken in Arizona with the cloudbuster, on five pre-announced dates with notifications sent to the NOAA weather modification offices. National Weather Service data from 424 rain-gauges in the region of Arizona, Southern Nevada, and South-east California were used for the analysis. An averaged *rainfall-doubling* effect was produced by the experimental work over that same large area. The results were communicated to officials in Washington, D.C., but only silence and "academic dirty-tricks" resulted. A major symposium, entitled "Wilhelm

Reich: A Reappraisal,” which I had organized through the American Association for the Advancement of Science for their annual conference in San Francisco, was undermined by the “skeptics” and censored.

Subsequently, I was subjected to the mud-slinging fury of the professional “skeptical clubs.” They harassed my family and me; we were threatened with burglary and death. And smear-hate mail was sent to the department chairmen in the university where I was employed, and to editors of journals that published my papers. I later learned that NOAA offices had purged their files of all the publications I had sent them that documented the effectiveness of the cloudbuster. Dr. Blasband and several of his associates also suffered similar abuse. Still, I pursued the topic.

My dissertation at the University of Kansas was on a different subject, a global cross-cultural survey of 1,170 different human cultures, with world-maps created of the distribution of social factors positively correlated to warfare and social violence. The findings corroborated Reich’s claims that traumatic and abusive care of infants and children, plus severe sexual repression of young unmarried people, predicted the appearance of sadism and social violence in the adult world. This was another controversy, but it was proven beyond doubt, and those findings were quickly picked up by scholars researching the “origins of violence” question, as well as by women’s groups worldwide. It provided another base of support outside the academy.

By the early 1990s, I had verified several more of Reich’s findings about the orgone accumulator and met various physicians in Europe who openly treated their patients with it, obtaining very good to remarkable results for both injuries and degenerative diseases. Severe burns in particular responded very well to the orgone radiation, which could speed healing and dramatically reduce pain. Pain reduction in cancer patients was also remarkable by all accounts, something which paralleled results from the controlled experiments with cancer mice. Physicians in the U.S. also worked with the orgone accumulator but typically concealed their activities from the FDA and medical licensing agencies.

I wrote *The Orgone Accumulator Handbook*, instructing people on Reich’s history, my experiences, and how to build and self-treat their ailments using the orgone accumulator. I recounted several instances of people experiencing “spontaneous” remissions of cancers and other serious diseases when using the orgone accumulator. Efforts to try and organize more systematic studies in the U.S. were impossible. However, there were two double-blind, controlled studies with the orgone accumulator in Europe, which tested for changes in basic human physiology as originally reported by Reich. Dr. Stefan Müschenich, who led one such effort at the University of Marburg in Germany, showed clear physiological reactions of volunteer subjects to the orgone accumulator, which were not reproduced when they were exposed to an identical looking but non-accumulating dummy-box. Body core temperature, blood pressure, and pulse rate all anomalously changed during the orgone accumulator sessions, which produced a subtle parasympathetic relaxation-reaction in the organism, exactly

as Reich described. No such reactions occurred in the dummy box. Neither the volunteer subjects nor those tasked with acquiring the data knew anything about Reich or the orgone question. While the sample-size was not large, the results were favorable to Reich’s claims and were statistically significant ($p=0.01$). This stimulated another identical trial at the University of Vienna in Austria by Günter Hebenstreit, also with statistically significant results favorable to Reich. These findings were discussed in my *Handbook*, which eventually was translated into eight languages, some by mainstream publishing houses in Europe, but in the U.S., what can only be described as a publishing and academic blackout has persisted on the subject.

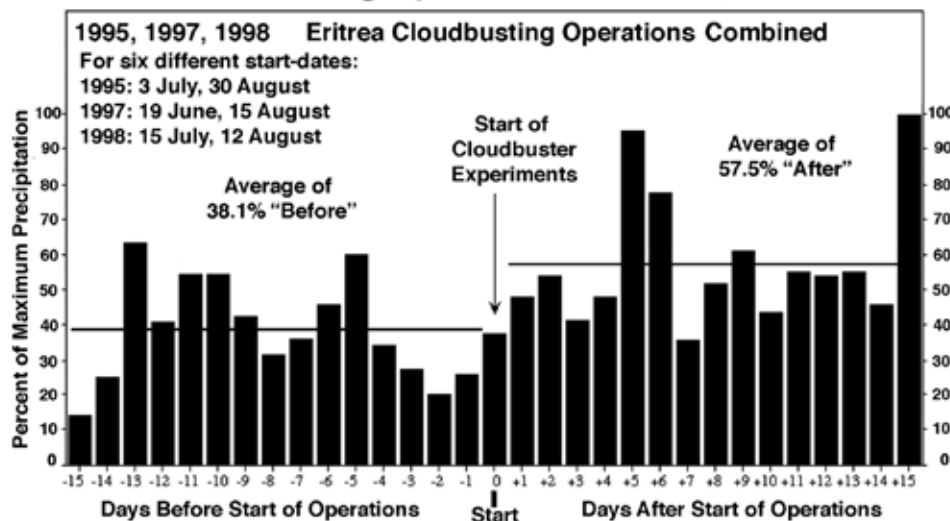
Serious scientists globally have increasingly shown respect for Reich’s work and dismay at the miserable way he was treated. I was gratified to be invited to speak by private physician’s groups and scientific organizations, and even at a few leading universities, generally by the diminishing number of gray-ing “maverick eccentrics” still surviving within the academy. More significantly, however, I was invited to carry out new experiments, working against critical drought situations using Reich’s cloudbusting methods, which were as big a breakthrough in atmospheric science as the orgone accumulator was in medicine and biology.

A severe three-year drought of historical proportions was ended in Israel by a team effort using the cloudbuster. That work, which I organized and directed in 1991-92, was supported by private foundations with logistical support and approvals from the Israeli government. The experiment resulted in widespread and saturating rains that quickly developed across the entire eastern Mediterranean and ending the historical drought with equally historical unprecedented rains. However, the meteorologists dismissed the results as the consequence of Mt. Pinatubo erupting six months earlier on the other side of the planet, so our proposal for a follow-up “Negev Greening Project” went nowhere.



Author James DeMeo standing near the trailer-mounted Cloudbuster Kiremti (Tigrinya word for “good rains”), during field work in Eritrea, Africa. Apparatus is packed-up for transport.

Aggregate Data Analysis for Cloudbusting Operations in Eritrea, Africa



I was subsequently invited to lead a team of scientists into Namibia and later Eritrea, again with private foundation funds and full logistical supports from the respective governments. A 12-year drought pattern in Namibia, with an acute 3-year situation approaching widespread famine conditions for southern Africa, was abruptly reversed by our work with the cloudbuster, with excellent and persisting rains spreading over the region. However, political reactions by the head meteorologists blocked our plans for a more prolonged effort at drylands greening. A pattern developed, where those in charge of weather forecasting or who ran well-financed cloudseeding operations—and who could do nothing about severe drought situations—became irritated by our successful work. But this was not uniformly so.

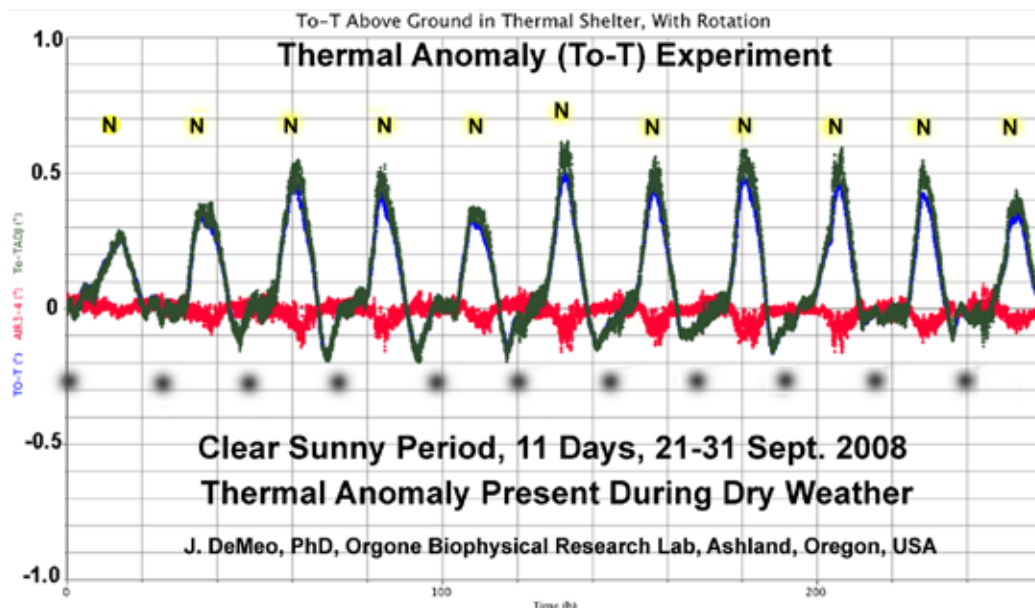
The operations in Eritrea were even more fantastic, nearly “unbelievable” in fact, given how that nation had been suffering under 30 years of chronic below-normal rains before our research team arrived and started working. In that case, however, the first year of results was so dramatic, producing above-normal rains after decades of drought, that officials delightfully agreed to finance a *five-year project*. And so every summer over the following years, I would assemble and lead a team of professionals in Asmara to work against the chronic drought conditions. At the height of our experi-

mental work, which in fact consumed more in expenses than the available funds, we had three cloudbuster devices working in different locations, coordinated by radio communications. Data analysis for the aggregate period showed a ~50% increase in the average daily percent of maximum rainfall, contrasting the quantities which fell over the entire nation before operations to the period after operations commenced ($p < 0.0042$).

Though this did not quite match the rainfall-doubling effect as seen in the Arizona experiments, it also took place in a much more difficult atmospheric situation. Eritrea sits right at the southeastern corner of the Sahara Desert. But of equal or greater significance, the increased rains over the Nile River Basin dramatically increased flows in the Nile River far

downstream, yielding the first-ever filling of Lake Nasser behind the Aswan High Dam. In fact, Lake Nasser not only

Thermal Anomaly Inside the Orgone Energy Accumulator, versus a thermally-balanced control enclosure, over 11 dry sunny days in September 2008. N (with yellow dot) = Solar Noon; Grey dot = midnight. This experiment was undertaken inside a well-ventilated but highly insulated shaded enclosure under a heavy forest canopy. The anomaly peaked at Solar Noon, with minima near midnight, unrelated to the daily temperature maximum and minimum. On overcast rainy days, even with a significant diurnal temperature variation, the anomaly basically vanished. This graphic is representative of similar results obtained by the author over several years of evaluation.

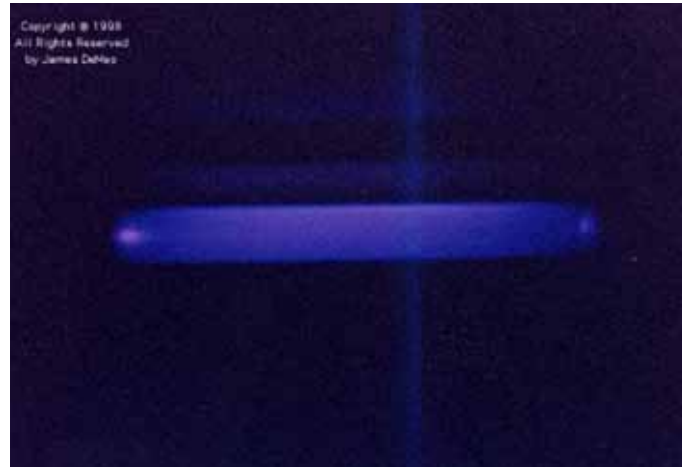


filled but overflowed out into the open Sahara Desert, creating several gigantic new lakes, which are still visible today on Google Earth just northwest of Aswan. But few people know of this work as it could not be published outside of our own in-house journal, in spite of (or because of) the excellent data and documentation. The Eritrea experiments showed that Reich's discovery could even benefit the open Sahara Desert, which is no small feat. Unfortunately, Eritrea and Ethiopia collapsed into open warfare shortly thereafter, forcing my decision to end the project, as our international team was put at risk.

Over the last decade, I have backed away from the difficult fieldwork overseas and mostly settled into laboratory investigations of the orgone energy itself, documenting its existence and physical properties. I've also investigated the old ether-drift experiments, based upon identified similarities between Reich's orgone energy continuum, which fills all space, and the cosmic ether of nineteenth century physics. Dayton Miller's interferometer experiments atop Mt. Wilson in the late 1920s, which were the most significant ever undertaken, actually measured and confirmed a real ether-drift signal. But he did so through identification of its material composition, which could be reflected or blocked by metal plate, in a manner similar to the metal composition of the orgone accumulator. Work by Albert Michelson on Mt. Wilson also confirmed this effect, but both men were defeated by the heavy-handed politics of science, as I reported in detail in several articles, and one invited presentation to a Society for Scientific Exploration conference in 2006. Newer work by Yuri Galaev at the Ukraine Radiophysics Institute has further confirmed the Miller result "down to the details." But again, only a few appear interested.

I also discovered that the cosmic vectors of ether-drift, as determined from experimental results by these scientists, matched exactly Reich's theoretical arguments on the spiral-form motions of orgone energy streams in open space—this lesser-known part of his work is of great importance to both biology and astrophysics, being in harmony with dissenting scientists such as Frank Brown, Giorgio Piccardi, Harold Burr, Hannes Alfvén, Halton Arp, and others whose findings go against the metaphysical theories of relativistic empty-space and big-bang creationism. The same cosmic vectors also match the coordinates as detected by Rita Bernabei of the DAMA project in Italy, who upset mainstream physicists with her discovery of the "dark matter wind," which is both orgone-similar and cosmic-ether-similar.

Reich's discovery of the orgone accumulator thermal anomaly was also recently confirmed in good detail at my laboratory, where the accumulator spontaneously creates a slight interior warmth without any known source other than the postulated orgone energy which penetrates and accumulates within its interior. I employed a very robust and tightly controlled methodology that accounted for all known anticipated thermodynamic influences. The results showed an average of + 0.1°C. temperature increase inside a small sealed orgone accumulator over a thermally-matched control enclosure constructed of identical size, thermal capacity, and resistance. The effect was most pronounced at solar noon when average peak temperatures inside the accumulator were around +0.5°C



Blue-Glow from Orgone-Charged High-Vacuum Tube (VACOR), as excited only by hand-stroking with no electrical excitation. Such soft luminous phenomenon led Reich to postulate a similar orgone energy basis to other blue-glowing phenomena in nature.

higher than inside the control. The peak daytime temperature of about 3-4 p.m. showed no relationship to the experimental results, which were carried out inside a totally shaded enclosure under a heavy tree canopy in the forest, where no sunlight could penetrate. And yet, the little accumulator "knew" when the Sun was at zenith, warming maximally, in spite of how its own metal layers would have reflected any incident infrared influences. It should have been systematically cooler than the control, but wasn't. All effects vanished to zero difference between the accumulator and control during rainy conditions, exactly as Reich noted. This experiment has been reproduced many times by others, though I believe my own protocol was the most ambitious to date. The late Albert Einstein also reproduced this experiment, initially verifying it and calling it a "great bomb" for physics, but he quickly recanted, proclaiming the result to be the consequence of certain "table-top" thermal parameters, which Reich argued against and in any case were not at issue in my experiment.

Other experimental verifications of Reich's long list of orgone accumulator anomalies are worthy of mention, such as the blue glowing quality of orgone phenomenon, which I have confirmed as an emission inside special high-vacuum tubes charged up inside orgone energy accumulators. They will illuminate with simple hand stroking, without high-voltage electricity as is otherwise necessary. I've also confirmed Reich's claim about increased counts inside special Geiger-Müller tubes charged up for long periods inside an orgone energy accumulator. At my lab, we record rather constant 100-500 cpm from an orgone charged neutron counter, which normally yields less than 5 cpm. Under certain conditions, it will race upwards to 4000 cpm, which cannot be "neutrons" as classically understood.

It is easy to be a reflexive skeptic of Reich's work. The authentic experimental work is fantastic enough. Reich knew this and called it the "too much" factor, which caused some people to turn away without bothering to investigate. On top

of that are the malicious “skeptics” who have the ear of mainstream journalists and whose criticisms of Reich often elevate their standing in the scientific community. They fill the media with every kind of false and malicious claim about Reich’s biography and science. And any internet search on his name or terms also produces the most stunning array of mystically exaggerated claims and gadgets from lay enthusiasts and eBay hawkers, making quite a mess of it all.

Nevertheless, my own experiments and those of many others, too numerous to mention here, have validated the facts and truth of Reich’s science, which is reproducible and has been verified many times on the major details. And all within the best traditions of the natural sciences.

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Book Review by Larry Dossey, MD

Dossey to Gladwell: Wake Up and Smell the Presentiment

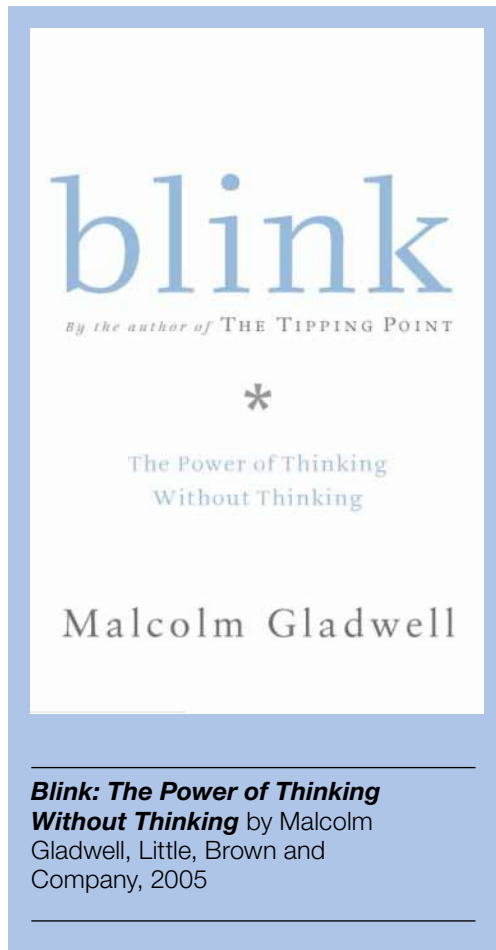
“Most people stumble over the truth, now and then, but they usually manage to pick themselves up and go on, anyway.”

—Winston Churchill¹

Malcolm Gladwell is a journalist, author, and popular psychologist. He began his career at *The American Spectator*, a conservative monthly magazine, followed by a position as a science writer for *The Washington Post*. Since 1996 he has been a staff writer for *The New Yorker*. His frequent focus as an author is the world of sociology, psychology, and social psychology. Gladwell achieved national notice for his 2000 bestseller *The Tipping Point*, which discussed the potentially massive implications of small-scale social events.²

Blink is Gladwell’s second book. According to his publisher, *Blink* draws on “cutting-edge neuroscience and psychology to reveal that the difference between good decision making and bad has less to do with how much information we process than with our ability to focus on a few, particular details. Gladwell shows how we all can become better decision makers—in our homes, in our offices, and in everyday life.”³ The subtitle of the book, *The Power of Thinking Without Thinking*, expresses the book’s main premise.

In the Introduction, Gladwell discusses how the J. Paul Getty Museum in California was almost taken in by an art dealer who attempted to sell to the institution a reputedly ancient Greek marble statue dating from the sixth century B.C. The Getty was appropriately cautious and subjected the statue to fourteen months of grueling tests to determine its authenticity, employing an electron microscope, electron microprobe, mass spectrometry, X-ray diffraction, and X-ray fluorescence. Finally satisfied, the Getty bought the statue for the asking price of \$10 million. In the fall of 1986 the statue went on display for the first time. Controversy erupted immediately. Four experts on ancient Greek sculpture had immediate, strong feelings that the statue was not genuine the instant they laid eyes on it. One authority, on merely glancing



Blink: The Power of Thinking Without Thinking by Malcolm Gladwell, Little, Brown and Company, 2005

at the statue for the first time, found that the word that immediately popped into his mind was “fresh,” which was not exactly what the Getty directors wanted to hear. Further research determined that the statue had been aged artificially, which fooled the sophisticated scientific tests done to determine the antiquity of the marble from which it was made. The statue was eventually found to be a fake.

Gladwell emphasizes the “intuitive repulsion” felt immediately by the naysaying experts. He states, “In the first two seconds of looking—in a single glance—they were able to understand more about the essence of the statue than the team at the Getty was able to understand in fourteen months. *Blink* is a book about those first two seconds.”

Blink contends we can not only know things instantly with almost zero information, as in the case of the fake Greek statue, but also that we can know things before they happen. This sounds quite like the nonlocal acquisition of information that constitutes much of the remit of parapsychology.

An example from Chapter Four deals with a group of Cleveland firefighters attempting to put out a kitchen

fire in a private residence. The lieutenant in command sensed that the fire was not responding properly. He suddenly turned to his men and said, “Let’s get out *now!*” Moments after they retreated from the kitchen, the floor on which they had been standing collapsed. The fire, it turned out, had originated in the basement, not the kitchen.

It’s at this point that “ESP” makes its only appearance in the book, and it is handled derogatorily. Gary Klein, an expert in decision making, is quoted by Gladwell as saying that the fireman in command “didn’t know why he had ordered everyone out.... He believed it was ESP. He was serious. He thought he had ESP, and he felt that because of that ESP, he’d been protected throughout his career.” Gladwell states, “Klein is a decision researcher with a Ph.D., a deeply intelligent and thoughtful man, and he wasn’t about to accept that [ESP] as an answer.” Gladwell implies that anyone who is intelligent

and thoughtful will reject ESP outright. He describes how Klein interviewed the firefighter and helped him to realize how he'd used subtle clues to make his decision to evacuate, such as the fact that the fire wasn't responding to water the way it should, it was hotter than an ordinary kitchen fire, the fire wasn't as noisy as expected, and so on. "All this thinking was going on behind the locked door of his consciousness," Gladwell says, ruling out the necessity of invoking ESP. So psi gets eliminated, and the citadel of reason is safely protected from the barbarians.

Other examples follow, such as when George Soros, the investment tycoon, successfully predicts world financial markets without rationally knowing why; or when Vic Braden, the famous tennis coach, unfailingly predicts double faults with extreme accuracy without a clue about how he does it. A psi-savvy reader would wonder whether these might be instances of precognition, but such wonder, having already suffered a slap-down in the case of the fireman, is not allowed to surface further in *Blink*.

No one doubts that humans can make snap decisions by unconsciously constructing inferences based on mere scraps of information, memory, and prior experience. The problems arise when all other possible explanations are disregarded.

Nowhere does Gladwell demonstrate a glimmer of awareness that a human precognitive faculty even exists. He fails to mention, for example, the various presentiment experiments that have been done by psi researcher Dean Radin and other investigators around the world that show, beyond reasonable doubt, that future knowing is an innate ability that possibly exists to some degree in most humans.⁴ To date, more than twenty of these experiments have been done by different investigators, and nearly all point in the same direction—that the body can react to a future event before that event has been randomly decided by, say, a computer.

An increasing number of prominent scientists have implied that modern physical theory does not prohibit the acquisition of future information. For example, Brian Greene, the Columbia University physicist, says, "[The] laws of physics that have been articulated from Newton through Maxwell and Einstein and up until today, show a complete symmetry between past and future. Nowhere in any of these laws do we find a stipulation that they apply one way in time but not the other...in theory events can unfold in reverse order."⁵ Physicist Gerald Feinberg observed, "If such [paranormal] phenomena indeed occur, no change in the fundamental equations of physics would be needed to describe them."⁶ Physicist O. Costa de Beauregard stated, "Far from being 'irrational,' *the paranormal is postulated by today's physics*"⁷ (emphasis in original). And, "Today's physics allows for the existence of 'paranormal' phenomena of telepathy, precognition, and psychokinesis.... The whole concept of 'nonlocality' in contemporary physics requires this possibility."⁸

Nice theory, but does it work in practice? Kary Mullis, the Nobel chemist, became fascinated with Radin's presentiment experiments, visited Radin's lab, and volunteered as a subject. The results shook him up. When he appeared as a guest on National Public Radio's *Science Friday* program in May 1999,

he said, "I could see about three seconds into the future.⁹ ... It's spooky. ... [Radin has] done that over and over again with people. That, with me, is on the edge of physics itself, with time. There's something funny about time that we don't understand because you shouldn't be able to do that...."¹⁰ If the skeptical Mullis could see into the future, why not Gladwell's subjects? Why not Gladwell?

Brian Josephson, a Nobel physicist at Cambridge University, says of the presentiment findings, "So far, the evidence seems compelling. What seems to be happening is that information is coming from the future. In fact, it's not clear in physics why you can't see the future. In physics, you certainly cannot completely rule out this effect."¹¹

In addition to presentiment experiments, the hundreds of precognitive remote viewing studies done at the Princeton Engineering Anomalies Research (PEAR) lab and elsewhere could explain many of Gladwell's examples in which time-displaced acquisition of information appears to occur. The precognitive remote viewing experiments show that a so-called receiver can receive distant information from a sender up to a week before the information is even sent, and even before the information that is to be sent has been randomly selected by a computer.¹²

In addition, thousands of trials of online tests of precognitive ability, such as those that have been logged at the Boundary Institute's website (www.gotpsi.org), strongly suggest that precognition is real, with staggering odds against chance.¹³

In my recent book, *The Power of Premonitions*,¹⁴ I reviewed empirical findings in replicated experiments from a host of sources—researchers Radin, Bierman, McCraty, Vassy, May, Schwartz, Spottiswoode, Klintman, and Wildey, and from institutions such as Princeton Engineering Anomalies Research lab (PEAR), Stanford Research Institute (SRI), and Science Applications International Corporation (SAIC). All told, this evidence suggests that we possess an innate, inborn capacity for future knowing. This collective evidence raises precognition from fantasy to fact. Henceforth the dialogue need not center over whether precognition exists, but on who's skilled at it, how it functions, how we can increase its reliability, and what it says about human nature.

In spite of Gladwell's exclusion of this evidence, he describes what may actually be a presentiment-type experiment without realizing it. He discusses in the Introduction a University of Iowa experiment showing that the palms of gamblers begin to sweat, indicating a stress response, long before they have a conscious clue that something is wrong with a deck of cards they are using. "In other words," Gladwell says, "the gamblers figured the game out before they realized they had figured the game out...." Advice to Gladwell: Wake up and smell the presentiment.

In the end, Gladwell's preferred explanation for blink-type knowing is, literally, ignorance. He states that we should simply "accept the mysterious nature of our snap judgments.... [W]e're better off that way."

I don't think we are better off that way. In any case, the ignorance surrounding nonlocal knowing is not as profound as Gladwell imagines.

Unfortunately, none of the above evidence receives a whiff of recognition in *Blink*, even though it is central to Gladwell's subject. One wonders if the exclusion is deliberate. For instance, the terms *premonition* and *precognition* do not even appear in the index. There is nothing new about this sort of rejection, of course. Many science writers consider the evidence favoring psi to be a "third rail," which, if touched, can be fatal to their careers. So they simply ignore the evidence that consciousness can operate nonlocally outside the present and beyond the body.

Some outstanding scientists are not as squeamish as Gladwell in considering nonlocal knowing as an explanation for many of the examples he uses. Among them is Lord Paul Drayson, Britain's science minister. In discussing *Blink*, Drayson says he has personally known in advance that something is going to happen. He says, "In my life there have been some things that I've known and I don't know why...like a 'sixth sense.'"¹⁵

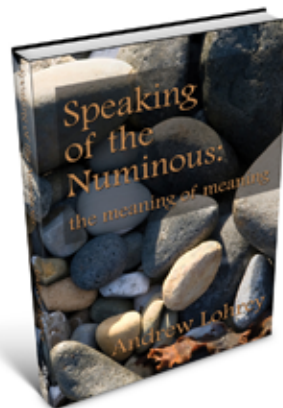
Psychologist and consciousness researcher James Carpenter thinks "sixth sense" is misleading. Carpenter believes precognition is so fundamental and innate that he calls it "first sense." In two landmark papers, he summarizes evidence suggesting that we always exist "a little beyond ourselves in space" and "a little ahead of ourselves in time."^{16,17} And if the need arises, says Carpenter, we can exist beyond and ahead of ourselves not just a little, but a lot. According to Carpenter, "first sense" is rather like psychic radar that sweeps ahead of ourselves in space and time, informing us of events we need to know about. It operates unconsciously most of the time, for reasons that mainly have to do with efficiency.

Thousands of lay readers have found *Blink* to be an enchanting read, and Gladwell deserves credit for inspiring their curiosity. But for those who realize that psi research has moved far beyond Gladwell's limited analysis, the book will probably seem fragmentary, incomplete, and a disappointing failure of nerve.

LARRY DOSSEY, MD, is the executive editor of *Explore: The Journal of Science and Healing*.

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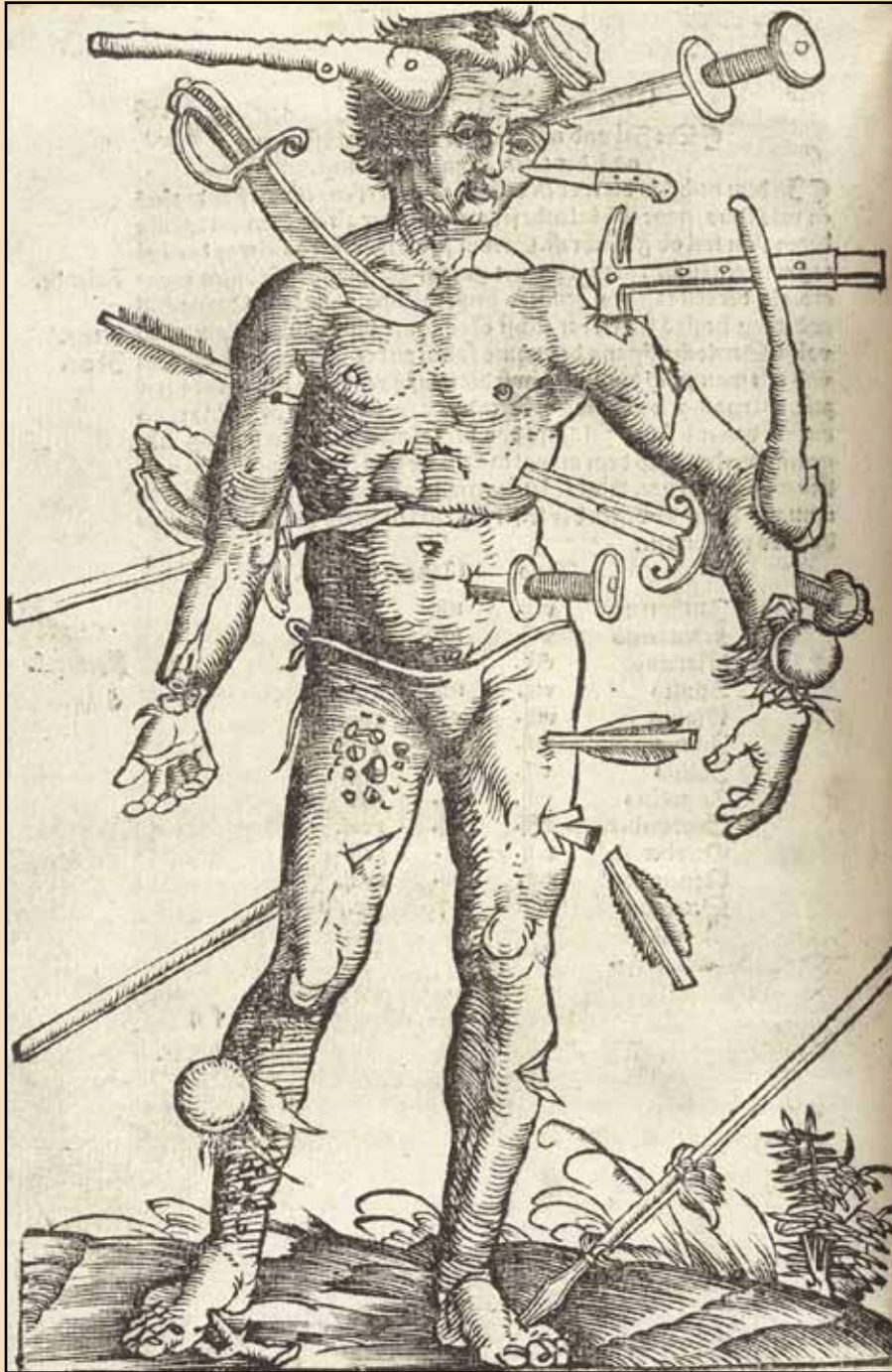
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