2022

Quantum Tunneling and Exceptional Human Capacities: Illustrating Different Skepticisms in Physics and Psychology

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Quantum Tunneling and Exceptional Human Capacities: Illustrating Different Skepticisms in Physics and Psychology
(Editor's Introduction)

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Quantum tunneling is a phenomenon where a particle appears on the other side of an energy barrier that it does not have enough energy to pass through, according to classical physics. This notion, first proposed by a German physicist in 1927, runs improbably counter to common sense and to rules thought for hundreds of years to govern physics. Acceptance of this and other quantum phenomena has required the reconceptualization of subatomic particles from solid bits of matter to probability clouds that extend infinitely in every direction. As such, quantum physics has required a skepticism driven by the need for sound evidence, rather than based on whether a given idea conformed to culturally common notions of reality. This form of well-tempered skepticism would serve the project of building a psychology of the whole person, and of all persons, in place of versions that reject phenomena based on cultural notions of what is or is not plausible, even in the face of substantive preliminary evidence. Such a skepticism is counterproductive in a way that dismissal of a patient's unexpected healing response could negatively impact the body's self-healing capacities.

Keywords: ***transpersonal psychology, skepticism, quantum physics, exceptional human capacities, parapsychology, placebo response***

A well known medical case of remarkable recovery illustrates more than the mind's power to heal the body. Around 1950 a Mr. Wright developed lymphosarcoma—a malignant cancer of the lymph nodes (Klopfer, 1957). Over time his condition deteriorated, and his physician, Dr. Philip West, reported that he had developed tumors the size of oranges on his chest, abdomen and neck, as well as in his groin and armpits. His liver and spleen had swelled to an enormous size, he frequently needed oxygen to breathe, and 1 to 2 liters of milky fluid were drawn from his chest every other day. Mr. Wright no longer responded to any form of treatment that could be given, and his doctor considered him near death.

Despite this, Mr. Wright held onto hope that some new drug would save him. When Krebiozen was announced as a successful treatment for cancer at a press conference in March of 1951 (Holland, 1967), and the clinic treating Mr. Wright was chosen as an evaluation site that would test the new drug, Mr. Wright enthusiastically begged to be included in the trials—even though his short life expectancy made him technically ineligible to receive the treatment (Klopfer, 1957). His doctor finally relented relented, and gave Mr. Wright the experimental treatment. Within a few days, Mr. Wright's tumors were half their original size, and within 10 days he was discharged with nearly all disease symptoms resolved. He resumed flying his plane, with no discomfort (Klopfer, 1957).

None of the other patients in the clinic showed any change from the course of injections, and within two months reports began to appear from the various evaluation sites, none of which showed any success. Mr. Wright lost faith in the efficacy of the drug, his mood became dismal, and he quickly relapsed to his original condition. His physician, Dr. West, then engaged in a deliberate deception and told Mr. Wright that a shipment of

an improved, double-strength version of Krebiozen would be arriving soon (Klopfer, 1957). The next day he gave Mr. Wright an injection of water, pretending that it was the improved drug. Mr. Wright recovered even more rapidly than the first time, and remained in excellent health for over two months while continuing to receive injections of water that he believed to be the refined version of Krebiozen. According to Dr. West, "tumor masses melted, chest fluid vanished, he became ambulatory, and even went back to flying again" (Klopfer, 1957, p. 339).

Shortly thereafter, the American Medical Association announced in a press release that "'nationwide tests showed Krebiozen to be a worthless drug in treatment of cancer'" (Klopfer, 1957, p. 339); the physician who had announced its efficacy to the press was later brought to trial for his role in publicizing a wholly untested drug (Holland, 1967). Within days of the news that Krebioizen had been found to be of no value, Mr. Wright was readmitted to the hospital, and he died two days later (Klopfer, 1957).

As noted, this case has been used as an illustration of the mind's power to heal the body (e.g., Rankin, 2020), though the paper in which it appeared focused more on how an individual with weak ego structure was highly susceptible to suggestion. Medical experts might rightly use the case to illustrate risks in promoting untested cancer treatments. But there is another point that can be drawn: the power of *disbelief* on the body's recuperative abilities.

This is not to advocate for the placebo value of quackery. There are more than enough examples of products that on their own may be healthy or harmless, but are sold with outsized or unlikely claims, such as acai berries to prevent Alzheimer's, or sleeping with a bar of lavender soap for leg cramps. While belief in such remedies may activate the powerful placebo effect (Crane, 2016), this fact is no excuse for deceptive marketing. This is especially true given that open-label placebos—that is, placebos administered without deception—show early promise (von Wernsdorff et al., 2021).

While medical caution over providing false hope in an unproven remedy is ethically sound, this needs to be balanced with care to avoid a skepticism that might undermine the healing potential of hope itself. A wise physician will not minimize a patient's unexpected positive response to an unlikely remedy, but instead of dismissing a questionable belief may redirect attention toward the body's self-healing capacities. Mr. Wright's extraordinarily rapid and repeated recovery from advanced stages of cancer (Klopfer, 1957) illustrate that the potentials of what a person can *sometimes* accomplish are well beyond what is considered medically normal, likely, or even possible. These outlier cases are ones that can and should reframe our understanding of human potentials, as well as suggesting areas of research into how these can be activated (e.g., Green & Wright, 2017).

In the field of psychology, the transpersonal area focuses on similar outlier phenomena—not merely for their curiosity, but for how these might reshape conventional and scientific understandings of who we are as human beings, the range of our capacities, and how to access wider domains of perception and functioning (Hartelius, 2022). It is of course necessary to maintain some skepticism in the face of exceptional claims, requiring evidence and eschewing uncritical belief based on tradition, authority, or feelings of certainty—and the degree of acceptance should be in proportion to the strength of evidence. But if skepticism is to be scientific, it should be cautious not to reject good evidence based on implicit assumptions of what is or is not plausible in the culture in which the study is being conducted, or in which the scientist was raised (Hartelius, 2019).

A double-blind study on the impact of intentionally treated chocolate illustrates this issue (Radin et al., 2007). In this study, individuals who ate chocolate that had been treated with intentions that those who ate it would experience increased energy and wellbeing reported significant improvements in mood after several days, whereas those who ate untreated chocolate from the same source reported no significant changes. These types of experiments are often met with harsh criticism by skeptics who dismiss the very possibility of human capacities that are culturally unfamiliar (e.g., Schwartzkopf, 2018).

In line with the research on effects of chocolate treated with positive intentions, a follow-up experiment found that participants who drank

tea surreptitiously treated with good intentions by Buddhist monks reported greater mood improvements than those who drank untreated tea that they believed had been blessed by monks (Shiah & Radin, 2013). This suggested that the act of blessing tea had greater impact than the placebo effect of drinking untreated tea that was presented as blessed. That this was not the result of some subtle suggestion conveyed to human participants can be seen in further experiments showing that water treated with intentions to improve the growth of seeds was associated with significant positive growth changes in small flowering plants, as compared with plants in a control sample (Shiah et al., 2017; Shiah et al., 2021). While such research is preliminary, it is likely little more than the tacit application of Western reality assumptions that causes it to be marginalized (Hartelius, 2019).

By contrast, there seems to be less bias against the unfamiliar in the field of quantum physics. A recent experiment showed that it was possible to predict the rate of quantum tunneling—a process in which a so-called particle appears on the other side of an energy barrier that it does not have enough energy to pass through, according to classical physics (Wild et al., 2023). This phenomenon, first predicted by German physicist Friedrich Hund in 1927, describes the behavior of particles that are more akin to clouds of probability that extend infinitely in every direction than to the apparently solid objects of everyday experience (Cutts, 2023). Although directly contradicting the expectations of established laws of physics, neither Hund's original work nor subsequent experimental demonstrations of quantum tunneling were dismissed as implausible and sequestered from physics in a "paraphysics" field, as has been the case with parapsychology.

In another recent study, mass in a proton that could not be measured in its constituent valence quarks, was identified in *interactions between its quarks and gluons* (DOE/Thomas Jefferson National Accelerator Facility, 2023; Duran et al., 2023). The notion that mass can be generated by the interactions of infinite probability fields, or that powerful gravitational waves might spontaneously create light (Brandenberger et al., 2023), are entirely counterintuitive to conventional assumptions of reality. Yet well-tempered scientific minds accepted these phenomena as potentially possible, pending demonstration by credible evidence.

Were psychology to cease from denying the possibility, for example, that mind might somehow extend beyond the individual, or that reality is constituted as much by relationships as by objects, the number of exceptional human experiences and capacities considered implausible despite some good evidence, might narrow considerably. This is not to suggest that evidence from quantum physics should be applied to the study of consciousness or psychology, a use which I have argued against (Hartelius & Crouch, 2020); however, by way of analogy, the difference in treatment of evidence for improbable phenomena in physics versus in psychology is not merely striking, but should be troubling to the degree that this research has potential to improve the wellbeing of those who come to psychology for relief from pain, anxiety, depression, and trauma.

Perhaps, just as empirically demonstrated quantum phenomena have required a reconceptualization of the nature of matter, the exceptional human experiences and capacities demonstrated in transpersonal psychology, as well as related and empirically rigorous disciplines such as parapsychology, may require a revision of common concepts of the individual person. There may be more to the human than what Western culture imagines, more in heaven and earth than are dreamt of in our science—as well as questions that cannot be answered until science is allowed, and funded (which is nearly the same), to ask them.

Skepticism is a necessary element of any critical discipline, including science, and serves to spur efforts to test carefully, develop evidence, and evaluate the quality of that evidence. On the other hand, skepticism that merely serves as a vehicle to impose or reinforce the unverifiable reality assumptions of a particular society is not a tool of science—it is a mechanism of cultural hegemony that deserves to be rejected. Application of a well-tempered skepticism, attuned to the need for sound evidence and cautious about imposing unverifiable cultural assumptions of what is or is not encompassed in reality, will serve in the work of

building a psychology of the whole person, and of all persons (Hartelius, 2019).

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About the Author

Glenn Hartelius, PhD, is Editor-in-Chief of the *International Journal of Transpersonal Studies,* co-editor of *The Wiley-Blackwell Handbook of Transpersonal Psychology* and *The Ketamine Papers*, and Secretary of the International Transpersonal Association. He also serves as Honorary Research Fellow for Alef Trust in Liverpool, UK. His research on the definition and scope of transpersonal psychology over 20 years has helped to define the field. He has also taught at the Institute of Transpersonal Psychology, Naropa University, Saybrook University, California Institute of Integral Studies, and Middlesex University in the UK.

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The *International Journal of Transpersonal Studies* is a Scopus listed peer-reviewed academic journal, and the largest and most accessible scholarly periodical in the transpersonal field. IJTS has been in print since 1981, is published by Floraglades Foundation, sponsored in part by Attention Strategies, and serves as the official publication of the International Transpersonal Association. The journal is available online at www.transpersonalstudies.org, and in print through www.lulu.com (search for IJTS).