

Opinion Essay

Random Coincidence or Psi: What Are the Odds?

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Abstract – Psi is the postulated cause or enabler of psychic or paranormal happenings. Apparently inexplicable coincidences are often taken to be indicative of psi. However, statistics teaches that the Law of Truly Large Numbers, or the Improbability Principle, shows that pure chance brings about coincidences that seem absolutely impossible to most people. The reality of psi will not become generally accepted in mainstream intellectual circles in absence of the demonstration, on demand and at will, of some phenomenon for which any other explanation is completely ruled out to the satisfaction of virtually all interested parties. Speculative models of psi suggest that possible psi abilities might be strengthened by enhancing the ability of human consciousness to access the human subconscious.

Keywords: psi – coincidences – models of psi – reality of psi

Zufällige Koinzidenz oder Psi: Wie stehen die Wahrscheinlichkeiten?

Zusammenfassung – Es wird behauptet, dass Psi die Ursache oder Grundlage von übersinnlichen oder paranormalen Ereignissen sei. Anscheinend unerklärliche Zufälle werden oft als Indikator für Psi angesehen. Die Statistik lehrt jedoch, dass das „Gesetz der wahrhaft großen Zahlen“ oder das Prinzip der Unwahrscheinlichkeit zeigt, dass der reine Zufall Koinzidenzen hervorruft, die den meisten Menschen als absolut unmöglich erscheinen. Die Anerkennung der Realität von Psi wird sich in den intellektuellen Kreisen des Mainstreams nicht durchsetzen, solange nicht ein Phänomen auf Verlangen und nach Belieben demonstriert werden kann, für das jede andere (konventionelle) Erklärung zur Zufriedenheit praktisch aller interessierter Parteien völlig ausgeschlossen ist. Spekulative Modelle von Psi deuten darauf hin, dass mögliche Psi-Fähigkeiten gestärkt werden könnten, indem die Fähigkeit des menschlichen Bewusstseins, Zugang zum menschlichen Unterbewusstsein zu erhalten, verbessert wird.

Schlüsselbegriffe: Psi – Koinzidenzen – Modelle von Psi – Realität von Psi

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Introduction

When something truly extraordinary happens that is personally meaningful, it seems natural to conclude that this could not have happened purely by chance.

We readily assume that a remarkable personally meaningful happening must have a personally meaningful cause. So if something I have dreamed then actually happens, I suspect the possibility of a paranormal or psychic reason: obtaining information pre-cognitively; or when a friend and I simultaneously have apparently the same idea, we consider again the possibility of something psychic, akin to mental telepathy.

Objectively speaking, however, one would like to calculate the probability that a remarkable occurrence might have come about at random, just by chance. Theorems of probability and statistics, as a matter of fact, include the *Law of Truly Large Numbers*, which states that if the number of possible occurrences is large enough, then some truly remarkable and “improbable” or “impossible” event *will* occur (Diaconis & Mosteller, 1989).

Several actual examples are discussed here to illustrate the dilemma of attempting to interpret a personally experienced “impossibility”: was it brought about by chance, or was there some paranormal cause?

An important data set would comprise a record of *all* possibly paranormal experiences (dreams, predictions, coincidences, etc.) together with the knowledge of how many had been misleading rather than accurate. But such data sets are lacking, and one has to make do with anecdotes. Two first-hand examples are given where a paranormal interpretation would have been wrong.

It is suggested that there is no objectively based calculation that could definitively establish either the paranormal or the random-chance interpretation of any truly extraordinary, personally meaningful happening.

Some Illustrative Examples

1. An extraordinary event, apparently inexplicable in any mundane way:

Michael Shermer is a prominent skeptic — “Skeptic” with an uppercase S, that is someone who insists that everything should be subjected to the authority of science, including all ideologies and religions and claims about such things as UFOs or Loch Ness Monsters. So it was an unsettling experience for Shermer when he had a truly extraordinary experience that carried intense personal significance:

The event took place on June 25, 2014. On that day I married Jennifer Graf, [...]; her grandfather, Walter, was the closest father figure she had growing up, but he died when she was 16. In shipping her belongings to my home before the wedding, most of the boxes were damaged and several precious heirlooms lost, including her grandfather's binoculars. His 1978 Philips 070 transistor radio arrived safely, so I set out to bring it back to life after decades of muteness. I put in new batteries and opened it up to see if there were any loose connections to solder. I even tried "percussive maintenance," said to work on such devices — smacking it sharply against a hard surface. Silence. We gave up and put it at the back of a desk drawer in our bedroom.

Three months later [...] we returned home, and [...] said our vows and exchanged rings. [...] [At] the back of the house [...] we could hear music playing in the bedroom. [...] Jennifer shot me a look I haven't seen since the supernatural thriller *The Exorcist* startled audiences. "That can't be what I think it is, can it?" she said. She opened the desk drawer and pulled out her grandfather's transistor radio, out of which a romantic love song wafted. We sat in stunned silence for minutes. "My grandfather is here with us," Jennifer said, tearfully. "I'm not alone." [...] Later that night we fell asleep to the sound of classical music emanating from Walter's radio. Fittingly, it stopped working the next day and has remained silent ever since" (Shermer, 2014).

2. Another apparently inexplicable extraordinary event:

Dean Radin reports these striking "synchronicities" in his book *Real Magic* (Radin, 2018: 83ff): In setting up a new institute for psi research, Radin had leased a suite in a suburb of Silicon Valley. He was surprised to see on the building's directory that one of his neighbors was named PsiQuest. He assumed a humorous non-coincidence, perhaps something like "Personnel Service Investigations". But when he finally met the president of PsiQuest, it turned out to be someone actually also engaged in psi research. Moreover he had been using a Tibetan dream-yoga technique in the attempt to contact or attract none other than Dean Radin. Quite a shock for both of them. Radin was further taken aback to find in the PsiQuest quarters precisely the items Radin himself had intended to acquire: "a certain kind of reclining leather chair, a shielded room" and a variety of laboratory equipment.

3. A personally experienced apparently inexplicable event:

My wife and I, on our way to Australia in 1958, visited my friend Noel McAskill in London, England. He wanted to show us some slides by means of his little hand-held slide-viewer, but the battery was dead. It was a Sunday in 1958 in England—no shops were open where we could have bought such a battery. So we went for a walk instead. Almost immediately I saw a battery lying in the gutter—and it was of the right size. Even more amazingly, it wasn't dead. So we looked at Noel's slides.

4. Another personally experienced extraordinary coincidence:

I had long corresponded with a fellow Loch-Ness-Monster enthusiast whom I'll call Y. In 1985 I was at the Loch for several weeks. Y and his wife were there for one of those weeks, and we enjoyed a number of wide-ranging conversations. I learned that Y's father was a statistician; and that his mother's previous husband had coincidentally also been a statistician—quite a famous one [...] who had later moved to the United States. We were both stunned by the coincidence that this man had, in just the previous year, been a visitor-in-residence at the university where I was Dean and had gotten to know him. (Bauer, 2017: 117)

Coincidence or Psi?

How could such happenings possibly be explained without resorting to eerily disquieting possibilities of supernatural influences that we simply do not understand?

Confirmed Skeptic Michael Shermer offered this explanation for example 1 above: “[S]uch anecdotes do not constitute scientific evidence that the dead survive or that they can communicate with us via electronic equipment” (Shermer, 2014); and elsewhere:

there is the *law of large numbers*: with seven billion people having, say, 10 experiences a day of any kind, even million-to-one odds will happen 70,000 times a day. It would be a miracle if at least a few of those events did not get remembered, recounted, reported, and recorded somewhere, leaving us with a legacy of frequent infrequencies.² Add to this the *hindsight bias*, in which we are impressed by the improbability of an event after-the-fact, but in science we should only be impressed by events whose occurrence was predicted in advance. And don't forget the *recall bias*, in which we remember things that happened differently depending on what we now believe, retrieving from memory circumstances that favor the preferred interpretation of the event in question. Then there is the matter of what *didn't happen* that would have been equally spine-tingling in emotional impact on that day, or some other important day, and in my case I can't think of any because they didn't happen. Finally, just because I can't explain something doesn't mean it is inexplicable by natural means. The argument from personal incredulity doesn't hold water [...] (Shermer, 2018).

My friend Jack (I. J.) Good, a prominent statistician and probabilist who favored Bayesian approaches, had instructed me on how to think about my personally experienced extraordinary coincidence, example 4 above, in a similar manner to Shermer's invocation of the law of large

² The *law of large numbers* in statistics says that as the sample size grows, its mean [= average] gets closer to the average for the whole population, in other words the true value. Shermer meant the *law of VERY or TRULY large numbers*, attributed to Persi Diaconis and Frederick Mosteller, which is that with a large enough number of possibilities, any or every outrageous thing is likely to be observed.

numbers: “In my stay at Loch Ness that year, I encountered dozens of people; and in my years as Dean I had met hundreds of people. And there could be many types of conjunction—not just mother’s former husband, many other possible kinds of relationship. So there existed many thousands, perhaps tens of thousands of possible conjunctions, each one of which would have seemed “amazingly” coincidental. The fact is that *some sort of coincidence is very likely to happen to each of us quite frequently*” (Bauer, 2017: 117).

So a general approach for attempting to estimate the odds against really striking extraordinary coincidences is to eliminate the personally meaningful elements, replacing them with the *kind* of happening, the *type* of event.

With example 1: an old transistor radio that has not functioned for a long time then suddenly plays music for a number of hours before becoming again apparently non-functioning. That may not seem so surprising in itself if one recalls that every now and again something that is not even a radio happens to pick up a radio broadcast: the filling of a tooth (Folmer, 2002), or something equally unlikely. No doubt there will be occasions when this seems like an eerie, personally meaningful synchronicity, perhaps because of the particular music or perhaps because of some association of timing or personal relationship. Few contemporary people can recall that the old crystal radios needed no internal power to work (United Nuclear, no date).

As to Radin’s synchronicities, it seems not much of a surprise if a particular embryonic business happens to lease quarters next to the same kind of business. Again, not much of a surprise if someone engaged in a particular research project indulges in day-dreams of encountering one of the most prominent researchers in that field. And when two groups are engaged in similar research, it is no surprise at all that the furnishings and equipment of their workplaces would be strikingly similar.

As to my 1958 experience in London, when one needs a battery, it would be a nice surprise—but not an eerie one—if a discarded one turns up that still has enough juice for the immediate task at hand; in point of fact, some types of battery regain a little capability upon resting for a time after having been apparently exhausted.

Counter Examples?

A very desirable way of estimating the probability that a psychic claim or prediction is correct in significant ways would be to compare the number of known successful predictions to the total number of predictions actually made; but that is impossible because the data are not available—there is no systematic reporting and recording of predictions, and in particular there is very little reporting indeed of unsuccessful predictions, because there is no incentive to do so by those who are most likely to know about it, those who predicted.

It happens that I can recount two pertinent anecdotes.

My sister has long been enthusiastically involved in matters of psychology and possibly psychic matters, in her later years even practicing semi-professionally as a psychically-sensitive counselor. On one occasion, when she was in her middle years, she woke up in the middle of the night, in Chicago in the United States, with the absolute conviction that something dreadful had happened to our father, in Sydney, Australia. Intercontinental phone calls at that time were something of a complicated big deal, but she managed to get connected. Our father picked up the phone, surprised to hear from her, especially since nothing out of the ordinary had occurred or was going on; and nothing awful happened to him for many years afterwards.

I once made a tentative prediction based on what had seemed a quite striking personally significant coincidence. As my father recorded in his memoirs, there occurred “a real miracle on Friday, 13th of January 1939”—everything finally came together that made possible our escape from Nazi-occupied Austria. The official, highly bureaucratic demands were such that my father had spent essentially full time for something like six months trying to put together all the necessary paperwork and travel arrangements, doing and re-doing because the Nazi-imposed regulations made all the necessary papers valid for only very limited periods of time. Thus Friday the 13th became for our family iconic of great good fortune.

Could it then have been purely random chance coincidence that 39 years later, on Friday the 13th of January 1978, I experienced one of the very best things that had ever happened in my professional career?

I had worked as a chemistry professor in academe since the 1950s and wanted instead to work at what is nowadays called Science & Technology Studies (STS), an interdisciplinary venture combining such disciplines as history, philosophy, and sociology of science. However, working as a chemistry professor obliged me to help in the educating of graduate students, which included finding support for them by obtaining research grants. My desired change of academic career would require me to find a job that would give me time to become qualified in my new field of work. So I applied for administrative jobs, on the soundly based perception that administrative work is not intellectually onerous and leaves time for learning new things. Over the course of half a dozen years, I had made some two dozen unsuccessful applications when finally I received the desired phone call from the Provost at Virginia Polytechnic Institute offering the position of Dean of Arts and Sciences. He mentioned that the decision to make the offer had been reached at a meeting the previous Friday—which, I realized, was Friday the 13th of January, 1978.

In later years, after I had become interested through the Society for Scientific Exploration in the evidence for things in which researchers of into psi are engaged, it occurred to me that

if these two notable Friday-the-13th-of-January events, separated by 39 years, were something other than purely chance coincidence, I might expect something significant to happen for me after another 39 years, namely on Friday the 13th of January 2017; and that would also satisfy Michael Shermer's criterion that "in science we should only be impressed by events whose occurrence was predicted in advance" (Shermer, 2018).

It seems a great pity, therefore, from more than one point of view, that nothing at all notable happened to me on that day.

Coincidence or Psi: Can the Odds be Calculated?

It seems to me inherently impossible to conceive a technique capable of calculating the odds on whether any given striking experience is nothing more than a coincidence brought about randomly by chance. That seems to follow directly from the law of truly large numbers: no matter how absurdly small may be the apparent probability, expressed as a p -value in the standard fashion, it could not establish that a given happening did not occur by chance, because it cannot be known how large is the population of possible happenings from which this noted extraordinary thing came to attention.

In any given case, in other words, it cannot be excluded that the law of truly large numbers is sufficiently explanatory. Good (1997) made that point in describing his own experienced coincidence with calculated probability of 1 in 17 million ($\sim 6 \times 10^{-7}$), mentioning that he had experienced three even less likely coincidences, for one of which he estimated a probability of 10^{-11} (Good, 1980). Hand has expanded on the law of truly large numbers with *The Improbability Principle* (2014), discussing several factors that magnify the effects of very large numbers.

All that is consonant with general qualms about use of p -values that have been expressed by quite a number of people, in particular from the point of view of Bayesianism. Good (1992) pointed out that p -values need to be modified in some manner when sample size is very large, and that the Bayesian approach then suggests much less striking conclusions. Matthews (1999) offered quantitative illustrations of this: for example, for an event that seems *a priori* highly unlikely, if the calculated p -value was 0.001 then a Bayesian approach would demand a p -value 1000 times lower than that (10^{-6}) before regarding the result as significant.

Another opinion on this—whether coincidence can be distinguished from psi by some objective calculation of pertinent odds—might be that coincidence and psi are simply incommensurable. In order to calculate the random chance of coincidence, the personally meaningful aspects of a given event are ignored, as illustrated by the possible explanations given above for the various examples of truly large numbers. Psi, on the other hand, is inseparable from what is personally meaningful. This train of thought is reminiscent of a remark by Steven

Weinberg, “The more the universe seems comprehensible, the more it also seems pointless” (Rigden, 1994).

I. J. Good has discussed the question of separating objectively calculated odds from the subjective power of a strikingly personal experience in a number of his writings at various times. On the one hand, the Bayes-favoring eminent professional statistician Good (1987) “would not be convinced by any single p -value greater than 10^{-8} in the absence of scientific evidence in favor of some naturalistic explanation”; on the other hand, the human Good said of his personally experienced coincidences, “this kind of direct experience carries a lot of weight and prevents me from being dogmatically against religion and quasireligion” (Good, 1980). He liked to speculate about such matters, and I recall his musing over how improbable an experience God would have to devise to ensure that I. J. Good would recognize it as a message from The Almighty; I think I am correct in remembering that he suggested odds of something like 10^{-21} .

Good’s great interest in these matters serves me as exceedingly strong personal, subjective, evidence against the possibility that aspects of human existence possibly surviving after death could communicate with living people: if such a thing were possible, whatever survived of Irving John Good (deceased 5 April 2009) would surely have found a way to communicate that post-death survival to his still-living friends.

In short, to coordinate or integrate the subjective and objective, the personal and impersonal aspects of the world, we still await the successful development of what Jahn and Dunne (1997) described as a “Science of the Subjective”.

Is Psi Real? As Global Consciousness or Global Sub-consciousness?

One impediment to developing a Science of the Subjective that embraces phenomena described in parapsychological work, notably that at the Princeton Engineering Anomalies Research (PEAR) lab, is that the very reality of psi remains controversial. Experimental studies of psi-type matters have yielded enormously high “statistical significance” in terms of p -values, but the actual effects observed have been quite small. The many reported striking effects, on the other hand, are anecdotal and not repeated; they can be *subjectively* convincing, but the law of truly large numbers warns that this is not *objectively* convincing.

Perhaps the central problem is the difficulty of conceiving how such a thing as psi could come about. One type of suggestion considers the possibility that it could be an evolved emergent property of human beings; another considers it an always-existing aspect of the universe alongside tangible matter and energy.

I am not aware of any detailed discussion of the implications of psi as an emergent property of human beings. As a capability of individual humans, one might expect that it could become continually more effective through practice and training. The lack of demonstrated deploying of psi talent at will or on demand suggests that psi as an emergent property is implausible. On the other hand, there have been some very detailed discussions of the possibility of an ever-existing psi alongside physical aspects of the universe.

Radin (2018: 194, fig. 14) offers a comprehensive model of reality in which consciousness and physical aspects of reality are at some deep level indistinguishable. On the other hand, at the level of normal human observation and participation, classical physical phenomena are quite separate from human consciousness. But below that level, classical physical phenomena turn out to require non-classical, quantum-mechanical explanations; and the consequences in action of individual human consciousness turn out also to be explicable only through appreciating the existence and influence of the human subconscious or unconscious. Radin's model suggests that human subconsciousness might potentially be able to communicate in some manner with physical phenomena at the level of quantum mechanics, to access information at that level or even to influence physical phenomena at that level. Such access to information would manifest, at the level of normal human observation, as extrasensory perception, clairvoyance, mental telepathy, precognition; the potential influencing of physical phenomena in this way would manifest as what is called psychokinesis, say, the ability of observers to influence the outputs of random-number generators (micro-PK) or to perform such apparent miracles as levitation or the Indian Rope Trick (macro-PK).

Jahn and Dunne (2004), too, envisage the existence of an ever-present, universal potential source of psi which they simply designate "The Source", to which human consciousness has potential access through specialized sensors, at the same time as access is hindered by specialized filters.

Both models suggest that a potentially fruitful way of nurturing psi abilities would be by enhancing the ability of human consciousness to access the human subconscious (Radin's model) or, on the Jahn-Dunne model, through weakening particular filters or strengthening particular sensors, which might well involve enhancing the interaction of human consciousness with human subconsciousness. The potential fruitfulness of such approaches is suggested by reported successes of psi research employing Ganzfeld techniques or in states of dreaming or altered consciousness.

Problems That Await Solutions

Good (1980) distinguished between spontaneous and non-spontaneous psi. He offered rather long odds (50 or 100 to 1) against the reality of non-spontaneous psi, in part because of the lack

of demonstrated at-will successes and in part because of known instances of fraud, in particular by Soal. As already noted, he would also demand very high odds that a striking coincidence (spontaneous psi) resulted from psi rather than from the law of truly large numbers.

General acceptance of the reality of psi phenomena probably awaits the demonstration on demand and at will of some phenomenon for which any other explanation is completely ruled out to the satisfaction of virtually all interested parties. In the meantime, the models proposed by Jahn and Dunne and by Radin offer intriguing possibilities for further speculation and more particularly for research. At the same time, determined “Skeptics” will continue to emphasize apparent sticking points that need to be resolved. For example:

- Jahn has discussed and rationalized many results of PEAR research in terms of the transfer of information; but a number of apparently observed phenomena seem to demand that mental efforts can exert tangible physical force, for instance spoon-bending or the manner in which balls fall through a slalom-like array of pegs.
- The reality of such macro happenings as levitation, which is cited as real by Radin (2018: chapter 7, St. Joseph of Copertino and Daniel Dunglas Home), will surely not be generally accepted in absence of demonstrations that can be publicly performed at will and under the most stringently controlled circumstances.
- Survival of individual human consciousness after death, reincarnation, out-of-body experiences, and near-death experiences are often lumped together, implicitly if not explicitly, with other so-called supernatural or paranormal or psychic phenomena. But when it comes to detailed attempts at building explanatory models, it soon becomes evident that there seems to be no necessary connection between, say, clairvoyance and reincarnation.

For explanatory models of all these claimed phenomena to be fully plausible, more attention needs to be given to possible transducers, what Jahn and Dunne (1997) described as sensors, the mechanisms that enable transforming of one kind of signal into something else: mental effort into the bending of spoons, for example. That human consciousness or perhaps subconsciousness can instigate tangible physical effects is demonstrated unequivocally by the well-established placebo and nocebo effects. However, there is no problem in specifying transducers within the human body and brain; psi, on the other hand, calls for non-local, presently unknown transducers.

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