

## DOES PSI EXIST AND CAN WE PROVE IT? BELIEF AND DISBELIEF IN PSYCHOKINESIS RESEARCH

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### ABSTRACT

Psychokinesis research is encountering difficulties in replicating its findings. Centuries before psychokinesis phenomena such as levitation or moving objects were well known. Today anomalous phenomena seem to be reduced to rare and weak effects in stochastic processes. While experimental and analysis methods became more and more professional in the last decades, researchers complain about a loss of effect size and evidence. The “Model of Pragmatic Information” (MPI) by Walter von Lucadou predicts a change or decline of effect size. According to MPI this is necessary because otherwise a paranormal experiment could be used for information transfer which might be an intervention paradox. In elaborating further theoretic implications and consequences of the MPI we show that we finally reach a point where the outcome of a given PK experiment can not be distinguished from random results. Therefore, we should abandon proof-oriented research. All we can find are different degrees of evidence.

Another interpretation is that increasing skepticism for itself might be the reason for the erosion of evidence. The author’s earlier analysis of Fourmilab Retro-PK data with respect to lunar phase yielded a  $z$ -value of 3.24 for the full moon interval. A replication yielded a  $z$ -value of -2.49 for the same interval. Some evidence is given that this effect overturn (change of sign) depends not only on the predictions of the MPI but on believing and disbelieving in paranormal phenomena. Other parapsychologists noticed that their experimental results often corresponded to their own belief or disbelief in paranormal phenomena. This seems to be more than just a coincidence or the result of single experiences, it might be part of the nature of psychokinesis phenomena itself. Such experiences are the result of interactions between one’s mind with the physical world, analysed by an experimenter. In the classical scientific view the experimenter is a neutral observer of the experiment without any influence on the result. This view has to be corrected. The experimenter has also expectations, fears and hopes in his mind which could influence the outcome of a PK experiment. He also belongs, with respect to MPI, to the psi agents of a PK experiment. More than in any other scientific discipline the result of an experiment depends on the experimenters belief or disbelief in paranormal phenomena. Both, belief and disbelief, are self-referential, they act as self-fulfilling prophecies and tend to create their own evidence which confirms the expectations of the paranormal-believing experimenter like the skeptic experimenter. Beside the parameter of Lucadou’s new experimental paradigm it is necessary to document the experimenter’s belief in paranormal phenomena and to evaluate its effect and its outcome. The best conditions for growing evidence might be to use test subjects and experimenters who do not doubt in the existence of psi. The demand of skeptics to ban parapsychology from the realm of science have to be rejected. It is a science with its own special research conditions.

### INTRODUCTION

The scientific status and position of parapsychology in the sphere of science has been a bone of contention from the very beginning (Bauer, 1985; Palmer, 1990; Alcock, 2003; Parker, 2003; Parker & Brusewitz, 2003; Irwin, 1989; Hoebens, 1982). Exponents of the skeptics’ organisation GWUP (the German CSICOP) challenge the ‘scientific nature’ of parapsychology and seek to ban it entirely from the sphere of science if it fails to provide proofs for the existence of psi. In this context, much is made of the fact that parapsychology has yet to succeed in identical replicating a single anomalous effect under laboratory conditions (Hüsgen & Kamphuis, 2000). Beside the lack of replication we find (as a consequence of it) a decline of evidence and effect size of paranormal phenomena. Is this a consequence of increased skepticism in the last centuries?

At the beginning of the 17<sup>th</sup> century there was no academic parapsychological research. Miracles and paranormal events were generally accepted and widely evident in the society. Skepticism was just beginning

to be a part of scientific work. In this time, the Italian monk St. Joseph of Cupertino, provoked the displeasure of the Holy Inquisition through the numerous cases of him levitating during the elevation of the host which could not be explained scientifically:

There are many skeptical witnesses of the numerous levitations of Joseph of Cupertino who did not trust these phenomena and had enough scientific knowledge to justify their doubts. Yet it was precisely before such skeptical witnesses that Joseph of Cupertino levitated to such amazing heights, virtually every time that mass was celebrated. The levitation occurred in him so frequently and led to such a disturbance of the service that he had to be tied down with lead boots; yet this was to no avail and he rose together with the lead boots. Sometimes he levitated to the ceiling of the church and it was only with the greatest of effort that he could be brought down to earth again from the highest ledge, which he held on to after his awaking from ecstasy. On several occasions, an acolyte tried to hold him down but was himself carried upward together with him. (Benz, 1969, p. 218).

Makro-PK phenomena like levitation were evident in the 17<sup>th</sup> century. There was little doubt about it, and even some skeptical witnesses were convinced by the experience of paranormal phenomena.

On the wake of the 20<sup>th</sup> century, paranormal effects became slowly an area of research. Reports of poltergeist phenomena and makro-PK events were widely discussed but never got an academic status or scientific recognition. Nevertheless, mediumistic phenomena were fascinating the academic world and attracted respected scientists like the radio pioneer Oliver Lodge. The famous German author and Nobel laureate Thomas Mann only hoped to see “once again, with my own eyes, the handkerchief ascending into the red light” (Mann, 1983, p. 255), and in 1922 mediumistic-talented test persons could move macroscopic objects many feet by psychokinetic influence (Bender, 1966, p. 496). As J. B. Rhine introduced scientific methods in parapsychology to evaluate makro-PK effects with psychokinetic talented test persons trying to influence dice tossing. Later Helmut Schmidt introduced electronic devices and random event generators as targets for micro-psychokinetic influence.

Today skeptic scientists supervise every paranormal experiment design to protect it against fraud or misinterpreted natural explanations. At the same time in parapsychological research anomalous PK phenomena become rare and weak, and have shrunk to minor statistical mean value deviations and micro-PK effects in large databases containing abstract columns of numbers. It is required to run tens of thousands, even hundreds of thousands of experiments before any significance becomes apparent. The days of flying monks and PK-moved objects are over. Why did the effects loose their impressive strength? Were they all the result of fraud?

Skeptic scientists argue that with improved methods of analysis and evaluation many errors and artefacts were excluded which seem to be the true source of claims of the paranormal. When the highest standard of analysis is reached, no paranormal phenomena will remain. But this is only one interpretation. It is the aim of this presentation to introduce another interpretation: increasing skepticism for itself might be the reason for the erosion of evidence. This depends on the nature of paranormal phenomena itself.

## THE LACK OF SUCCESSFUL REPLICATIONS

In 1997 the Princeton Engineering Anomalies Research group (PEAR) published its evaluation of a twelve-year series of micro-psychokinesis tests with random number generators (RNGs) which came to a (statistically) impressive conclusion:

The overall scale of the anomalous mean shifts are of the order of  $10^4$  bits per bit processed which, over the full composite database, compounds to a statistical deviation of more than  $7s$  ( $p = 3.5 \times 10^{-13}$ ) (Jahn et al. 1997, p. 363).

The effect size of one bit in every 10,000 which could be changed by the test subject in the intended direction appeared to be reliable and leading to the expectation that psychokinesis really exists as an anomalous, replicable phenomenon. A similar conclusion was drawn by Dean Radin:

After sixty years of experiments using tossed dice and their modern progeny, electronic RNGs, researchers have produced persuasive, consistent, replicated evidence that mental interaction is associated with the behavior of these physical systems (Radin, 1997, p. 144).

This leads to the expectation that PK effects could be easily reproduced with a large number of tries and test subjects. In 1996 the Fourmilab Retro-Psychokinesis Project was founded, an internet based psychokinesis experiment which opened the possibility for interested test persons all around the world to take part in the PK experiment. But the still ongoing Fourmilab Retro-Psychokinesis Project failed in generating significant mean shift deviations in the overall summary. 162,687 registered experiments since January 11<sup>th</sup>, 1997 were counted until June 10<sup>th</sup>, 2004, each of it with 1,024 bits and a total sum of 166,591,488 “tries” performed by 15,686 test subjects. According to PEAR’s expectation of one bit per  $10^4$  bits changing in the intended direction meanwhile the total z value has to be appr. 2.58 standard deviations. Instead of it the actual overall z reached a non significant level of -0.4377 standard deviations.

Also in 1996, the collaborative program of anomalous Mind-Machine Interactions (MMI) under the leadership of the PEAR group was established. The laboratories of the Freiburg Anomalous Mind-Machine Interaction (FAMMI) and the Giessen Anomalies Research Program (GARP) took part in it. Their common goal was to replicate the successful PK results of the PEAR PK experiments. What, then, could be more disappointing than to discover in the years that followed that the large-scale replication test performed by the MMI consortium was neither able to confirm the effect size that had previously been established nor to attain the level of significance which was to be expected on the basis of the tests run previously (Jahn et al. 2000).

This disappointment certainly fed the (skeptical) suspicion that anomalous psychokinesis effects do not exist (Alcock, 2003). However, according to Walter von Lucadou there would have been in fact no real reason to be disappointed, if the MMI consortium had applied his model of pragmatic information to the replication and the formulation of the effect size expectation. His model predicts that decline effects must arise in future replications (Lucadou, 2001). Is the model of pragmatic information convincing enough to reject any skeptic objection?

## THE MODEL OF PRAGMATIC INFORMATION

The model of pragmatic information (MPI) is a theoretical approach predicting such declining effects in psychokinesis experiments. It is not yet a complete and finalised theory, merely a model which seeks to describe with analogies the conditions in which an anomalous effect might be expected.

In MPI anomalous or psi effects are not supernatural but meaningful correlations between the test person (psi agent) and the target system (RNG). While interacting, the psi agent (or test subject) and the RNG become a closed system with self-referential dependencies, an ‘organisational closure’ (Varela, 1985). This is irrelevant to any temporal or spatial distances, it is a non-local analogy to non-local effects in quantum mechanics (Lucadou, 1992). Its boundaries are defined by the ratio of internal and external pragmatic information in the interaction of its constituent parts. (Lucadou, 2001) The non-local correlations of MPI are – in worst case – only a weak violation of the laws of nature as known today because the underlying mechanism of the correlation is unknown. However, the situation becomes more critical when such non-local correlations are supposed to be used for long-distance transfer of information or signals. The possibility of intervention paradoxes prohibits such an information transfer: it would be a serious violation of natural laws. (If I know what will happen in the future I can act in the present in such a way that I can prevent unpleasant future events occurring.) Therefore Lucadou recommend: “Do not treat psi as a signal!” (Lucadou, 2001, p. 10)

Pragmatic information is “a measure for the meaning of the information”. It manifests itself in “its effect on the system”, but it has no informative content (unlike a newspaper or a newscast on the radio).

Pragmatic information (I) which a system produces, is in itself the product of further factors which exclude the possibility of using pragmatic information for signal transfer: An event with the character of novelty happens unexpected and suddenly, it cannot be the basis of signal transfer. An event which acts with autonomy cannot use for signal transfer too. These factors of pragmatic information exist in opposites: Novelty (E) vs. Confirmation (B). (Weizsäcker, 1974) Lucadou added later Autonomy (A) vs. Reliability (R).

(Lucadou, 1997) . The portion of pragmatic information grows in line with an increase in the portion of autonomy and/or novelty. The system itself contains something that resembles a “memory” in which the system states of the past are “stored”. While the factors B (Confirmation) and “R” (Reliability) rise, the product I (the produced pragmatic information) falls. These factors are responsible for the decline effects observed in the replication experiments, because the novelty declines when repeated tests are run to reproduce such effects. At the same time, the autonomy is limited, since one possible test result is already available as a result of the pilot experiment. In order to enable a repetition of a high degree of novelty, the effect must emerge either elsewhere in a replication where it is expected, or it must change its effect size or direction. MPI provides the possibility of conceptual replications with high degrees of novelty and autonomy. Identical replications have to fail: if they are successful they could be used for signal transfer which would violate the excluding of intervention paradoxies.

After all, with such a model the results of random experiments can be described. Yet, how do we know if a single psi effect claimed is a (still) unexplainable anomaly and not simply a variety of coincidence? Can meaningful research activities be conducted at all under such conditions?

In 2000 the author made a conceptional replication of Radin and Rebman’s claimed full moon effect in casino payout rates (Radin & Rebman 1998) with Retro-PK experimental data from Fourmilab (Watkins, Moore & Walker, 1996), expecting that the Fourmilab Retro-PK data would demonstrate the same full moon effect which was claimed by Radin and Rebman. The time serial analysis of the experimental data with respect to lunar phase was published in the year 2000 (Etzold, 2002). For the full moon interval (+/- 1 day) A significant z-value of 3.24 for the first 53,082 Fourmilab Retro-PK experiment data seems to confirm Radin and Rebman’s claims of a peak effect in the period of one day before and one day after full moon. Was it an anomaly or just a coincidence? After the publication in 2000 I made a replication of my first analysis with the next 47,192 experimental data which were accumulated in the Fourmilab Retro-PK data base until August 2001. This time I was doubtful about the outcome of the analysis. I could not believe that the observed lunar effect was persistent enough for replication (MPI for example forecasts a decline effect for the new evaluation). Now I got a (negative) z-value of -2.49 for the specified full moon time period, and I reported that this replication failed (Etzold, 2002).

Referring to my results (Etzold, 2002), von Lucadou wrote (2002, p. 83):

The MPI ... does not state that, if the experiment were to be repeated, the effect that had been established earlier would simply disappear, since it was merely a random fluctuation. Under MPI, it either disappears *slowly*, something which one would not normally expect to occur with a random fluctuation, or it *overturns* (as was the case in the Etzold study), or it appears in *other channels*, as occurred during the large-scale MMI replication experiment (Jahn et al. 2000).

In a somewhat schematised form, three possibilities therefore emerge under MPI for an anomalous effect during replication:

- a) Slow reduction (Decline)
- b) Overturn, change of signs
- c) Emergence in ‘other channels’ (Displacement)

Do these truly represent all of the possibilities, or are there more? Lucadou certainly has excluded the possibility of only a purely random result presenting itself during replication. As far as the three possibilities are concerned, a) and b) would appear to be reasonable to the extent that they are found in the observation direction or at the other end of the scale. Yet, possibility c) appears to be highly problematic. How do I know in which ‘channel’ the effect will re-appear? What happens if I am unable to find the channel because I do not possess the methods and measuring techniques for this channel?

These three possibilities therefore are not a real help if I am unable to say immediately after completing the replication experiment and prior to evaluating the data whether or not, under the circumstances, I can expect the outcome to fall into category a), b) or c). Without further definition, the three possibilities put forward by Lucadou can be applied to the expected effect of any given RNG experiment in replications. A lack of evidence always remains. Lucadou himself admits in general (2001):

To my conviction, parapsychology has ... not yet succeeded in establishing indisputable scientific evidence that psi exists. (p. 7)

In a discussion with Volker Guiard (Lucadou, 2003), Lucadou points to the two fundamental theorems of parapsychology which I would like to reiterate at this juncture (Lucadou, 1997, p. 162):

1) Psi phenomena are non-local correlations in psychophysical systems that are induced through pragmatic information which is generated by the (organisationally closed) system.

2) Each attempt at using non-local correlations for the purpose of signal transmission causes these to disappear, or converts them in an unpredictable manner.

In connection with the second fundamental theorem and its implied avoidance of intervention paradoxes, Lucadou (2003) also writes

that psi must be conditioned in such a manner that no reliable signal transmission can result. This would suggest that, during a psi experiment, each statistical deviation that is measured and which can be interpreted as psi or an anomaly may not exceed a certain parameter (p. 139).

A *signal transmission* would mean: a clear and identifiable signal which is more than pragmatic information without any uncertainty.

### WHY THE EXISTENCE OF A PSI-ANOMALY CANNOT BE PROVEN

In empirical science, inductive evidence is taken to confirm hypotheses which are derived from experience, observations and experiments. In this context, the term 'inductive' merely stands for a probable causal link between a hypothesis and the findings of an experiment or observation. The amount of truth in a hypothesis becomes all the more probable, the more frequently it can be repeated. Evidence relies on information which can be obtained from evaluating the experimental data.

For parapsychology this process of obtaining evidence depends fundamentally on MPI:

Because the MPI is a general system-theoretical description of interacting (self-referential) systems, it can also be applied to the system that creates scientific evidence. (Lucadou, 2001, p. 10)

The information contained in the claims of evidence can, for example, be summarised in one sentence: 'anomalous psi-phenomena exist'. This is more than just external pragmatic information. It is a concrete piece of information content. This means that the correlation must be so convincing that it unmistakably 'conveys' such information and consequently assumes the character of a signal. This approach, however, violates the second fundamental theorem of parapsychology since, after all, the intention of this 'horizontal signal transmission' is to convey the information that 'the anomalous psi-phenomena exist'. The consequence of this is that the non-local correlation disappears or is modified in an unpredictable manner. In concrete terms, this means, that as soon as the experiment is repeated for the purpose of proving the anomaly, the results of the experiment will vary in the frames of the null hypothesis.

For skeptics the *conditio sine qua non* for evidence is replication, and psi research can never achieve the status of science because these phenomena cannot be replicated. Hergovich (2001) summarises the skeptical position:

To date, no convincing experiment has been put forward that proves the existence of psi-phenomena. Not because the methods required by psychology could not be met or because the effect sizes were perhaps too weak ..., but because the effects are not reliable enough. (p. 122)

Under MPI, however, the effects cannot be 'reliable enough'. The situation becomes even more complicated. In such an experiment, in every fragment of evidence the whole questionableness of our conventional worldview is present. With such a burden of information, the replications possibly not produce anything other than random fluctuations, according to the second fundamental parapsychological theorem.

Under scientific research conditions, psi comes therefore in fact across as a troll, a ghost that only manifests itself when there is no scientific conclusiveness. "The more confident one is of having 'bagged' the psi effect, the lower the chances are that it can be replicated in a future experiment" (Lucadou, 1997, p. 187). However, on this basis, it is no longer possible to prove psi-anomalies through further replication with the help of scientific laboratory research, and any attempt will lead to further disappointment. What ways out are there?

## BELIEVE AND DISBELIEF IN PARAPSYCHOLOGICAL RESEARCH

Anomalies in the sense of psi effects are evidently phenomena with the property that they cannot be proven using conventional scientific methods. With respect to psi anomalies we have to look for evidence but not for proofs because proof-testing methods will destroy any possibility of finding evidence. Lucadou (2001, p. 13) has therefore proposed a new experimental paradigm that has been derived from MPI and which modifies the exterior test procedures and their evaluations with a view to attaining better findings. These include among others: no accumulation of evidence; short test runs; triple blindness; conceptual, i.e. no identical replications. However, his fundamental requirement alone, that of not treating psi as a signal, raises doubts as to whether this new paradigm can produce better results. As long as this new paradigm is also accompanied by a level of interest in producing scientific proofs, any potential anomalous effect may be bound to collapse, no matter how much autonomy and novelty the experiment is subjected to.

If the core statements of MPI and the conclusions that we have drawn here are correct, we are dealing with a class of phenomena that, per se, cannot not be proven by conventional means. All we can get are different degrees of evidence.

Dealing with psi anomalies scientifically therefore requires that I already believe in the existence of these anomalies if I want to obtain positive and significant results. This credo is not to be interpreted as any form of intellectual shortcoming like Hergovich (2001, p. 171) claims, but rather as an opportunity. By doing this, the experimenter is taking off the pressure from his research activities to have to prove something that cannot be proven. This could facilitate the scientific progress in parapsychology. The traditional Cartesian doubts that are prevalent in natural science are also merely a subjective fundamental principle which is just as capable of producing its 'cognitive blind spots' as 'belief' does. Yet, in the case of parapsychology, the Cartesian doubts are counterproductive, as it has been shown at last by the failed replication tests performed by the MMI consortium (Jahn et al. 2000). Only by this way it can be checked if the claimed human-machine interaction actually exists, if the thoughts in the mind of the experimenter can generate a corresponding effect in the physical world. Those researchers who believe in the existence of anomalous phenomena will get more positive results in PK experiments with other test persons (Smith, 2003). Those who doubt this will get also the appropriate 'psychokinetic result' which seems to negate the existence of paranormal phenomena. The growing lack of positive PK results, the "erosion of evidence" (Lucadou, 2001, p. 7) might be a result of growing disbelief in the possibilities of PK which for itself could be a PK-generated result.

The first true indication of this effect emerged in the studies performed by Gertrude Schmeidler (1943) on the effect of belief or disbelief persuasions in ESP experiments. She observed that subjects who believed in an anomalous effect (the 'Sheeps') performed better than those who viewed anomalous effects with skepticism (the 'Goats'). Schmeidler's notion of separating the 'sheep' from the 'goats' was: "Do you believe it is possible that ESP can be shown under the condition of this experiment?" A meta-analysis of the 'sheep-goat ESP studies' for the years between 1947 and 1993 performed by Lawrence (1993) produced an astronomically high z-value of 8.17 ( $p=1.33 \times 10^{-16}$ ) which provides high evidence for the existence of a sheep-goat effect. Edgar Wunder complements in reaction to my own reflections (Etzold, 2004):

The meta-analysis of Lawrence already was even a successful replication, namely of the above comparable study of Palmer (1971). Palmer (1971) found in the studies published till there a sheep-goat effect of a medium effect size which Lawrence found in the studies published afterwards again in the same order of magnitude.

At first sight it seems that contrary to the predictions of the MPI successful replications are possible. But we have to state that the sheep-goats meta-analyses lie beyond the scope of the MPI. Belief is a category which amplifies the character of the closed system, the organisational closure, which is the basic condition for the MPI. Disbelief of the psi agents prevent the development of an organisational closure. In this sense the high evidence for the sheep-goats effect might also be an evidence for the MPI. Belief and disbelief are the basic categories which allow or prevent that MPI becomes effective. But successful results are limited by becoming character of a proof. With other words: MPI with belief as a basic condition might work as long as

one does not “treat psi as a signal”. We will find (more or less) growing evidence but no undoubtful proofs of the paranormal.

The same statement appears to be applicable to scientists who perform research in this field. In the classical scientific view (and in Lucadou’s MPI) the experimenter himself is neutral and objective regarding any results of the experiment. Only the external pragmatic information which is generated by the closed system is of importance. But with increasing interest in the outcome of the experiment, the experimenter himself can become part of the organisational closure too and interact with the target system. Regarding my own studies (Etzold, 2000, 2002) I wonder who were the psi agents in the case of the observed lunar effect in the Fourmilab Retro-PK data, the approximately 8,000 test subjects who didn’t and still don’t know that they were tested for lunar effects, or I, the experimenter, who believed / disbelieved in lunar effects? Believing in psi seems to improve the results of PK experiments. Parker noted:

Recently, Matthew Smith and Michael Gordon investigated the psychology of the 50 named ‘psi-conductive and psi-inhibitory experimenters’ and found by multiple regression of self-report questionnaires that higher psi-conduciveness scores were associated with belief in one’s own PK [psychokinetic] ability (Parker, 2003, p. 128) [and added:]

Some empirical support is found in a review by Brian Millar ... who concluded that considering psi ability is rare, psi-conductive experimenters were themselves to be found over-represented as psi-conductive subjects!

Smith, while discussing different kind of experimenter effects based on social-interactional explanations (Smith, 2003), has collected some successful studies of parapsychological experiments which might confirm this statement and supposed:

If psi is real, then it is plausible, indeed likely, that the experimental participants are not the only source of psi in a successful parapsychology experiment. The experimenter may also exert a psi influence over the data. Given that apparently ‘psi-conductive’ experimenters typically tend to believe that psi exists, and are highly motivated to obtain findings in support of psi (often more so than their research participants) then one might argue that the experimenters are potentially a more significant source of psi than the participants. (Smith, 2003, p. 79)

Others before him have suggested the same experimenter-influence and noticed some anecdotic material:

For example, when Blackmore, a devoted parapsychologist for many years, found herself increasingly skeptical about *Psi* as a consequence of her inability to produce experimental evidence for it, she noted that ‘many parapsychologists suggested that the reason I didn’t get results was quite simple – *me*. Perhaps I didn’t sufficiently believe in the possibility of *Psi*’ (Alcock, 1987, p. 561).

This is possible. Lucadou wrote in view of the MPI: “... the model also includes the reverse action of pragmatic information from outside to inside.” (Lucadou, 2001, p 11), and Smith (2003) commented in view of experimenter effects:

From a methodological perspective, whatever the purported mechanism(s) of this effect of the experimenter upon the data, it does raise potential problems for skeptical researchers who wish to attempt to replicate psi experiments. This is because it suggests that such researchers, especially if they act as the experimenter who comes into contact with research participants, are less likely to obtain positive findings even if the psi effect is real. (p. 82)

This material gives some evidence for the claims that a causal link exists between the decline of effect size and erosion of evidence with increasing of scientific criticism and skepticism. If this is true one skeptic experimenter or even other persons like checkers or observers (White, 1976a) could dominate the effect size of the whole experiment.

Alcock (2003) told an example for this case in which his friend Jeffers was involved, but without noticing that he himself could be the reason for obtaining negative results. “Jeffers stands in lonely company as one of the very few *neutral scientists* who have empirically investigated the existence of psi phenomena.” (Alcock, 2003, p. 36) Jeffers tried a conceptional replication of the PEAR RNG-PK experiments, not using RNGs but interference of light as target for anomalous influence. Alcock himself, whose position is radical skeptic, was involved in this experiment:

Jeffers came to me at least a tad defiantly, requesting that I review his experimental design and offer any suggestions and criticisms before he began his research. He stressed that I should not after the fact, were he to obtain data supporting the parapsychological interpretation, then argue that the experiment was not to be taken seriously because it had fallen methodologically short in some fashion. Thus began our relationship, which was to grow into the very positive one that it is today. (Alcock, 2003, p. 36-37).

In the term of the MPI Alcock himself became part of the organisational closure, in this case as a doubtful experimenter who wished to find the confirmation for his disbelief in Jeffers' experimental result: "As Jeffers reports in his paper, his research findings give no support to the Psi hypothesis." (Alcock, 2003, p. 37) The possibility that Alcock himself produced via the experimenter's psi faculties the negative result of Jeffers' research was not discussed in his paper, but cannot be ruled out if we apply the MPI for the whole system which consists of Jeffers, his experiment target and also Alcock as critical designer and reviewer of the experiment. Alcock, who believes in the null hypothesis and asks to give the null hypothesis a chance will find nothing else than evidence for the null hypothesis. If psi exists, and I believe it, psi will also acting in the skeptics attempt to obtain evidence for the non-existence of psi.

## CONSEQUENCES

In science we have "two schools of research on belief in the paranormal" (Lawrence, 1993, p. 83), represented by scientists and investigators who differ fundamentally in their approach: "Parapsychologists' who believe in the possible existence of anomalies as well as the 'skeptics' who reject the idea that anomalies or paranormal phenomena could exist (Hergovich, 2001, p. 119). Every school has their own lists of studies which provide evidence for the correctness of their own belief or disbelief. These two schools have been around since the inception of scientific parapsychology, and they are testimony to the fact that the scientific status of parapsychology was undefined in the beginning.

The conclusion drawn by the parapsychologists that predicated anomalies (or psi effects) cannot be proven in sense of a skeptical proof, might alleviate the tension in the relationship. For the 'skeptics', this would mean making a concession of not demanding from the parapsychologists what they themselves (and other scientific disciplines) can not produce. For the parapsychologists, it would mean relief in that they would no longer need to have to 'prove' anything to 'the others'. Instead of having to invalidate their own findings in a proof-orientated world of research, they have now found space to run process-orientated research. This means that they no longer seek to prove whether or not an anomalous effect actually exists but involve themselves in an anomalous phenomenon and initially describe what experience on this effect is being gained in the field of scientific research.

Lawrence (1993) claimed:

What is needed is a good, reliable, accurately validated measure of general belief in the paranormal (...).

Questions should most certainly include the Schmeidler question seen to be joint most successful measure of belief in terms of getting results. (p. 83)

Together with Lucadou's requirements of no accumulation, short runs, conceptual replications (Lucadou, 2001, p. 13) it is necessary to add the requirement of believing in successful PK experiments to the MPI: "It is obvious that the role of the experimenter (conceiving this term in its broadest sense) must be taken into account in designing the results of parapsychological experiments" (White, 1976b). And Parker (2003) added: "High-scoring subjects and successful experimenters are to be found and a technology is available." (p. 132) Test subjects like experimenters should be tested before the beginning of an experiment, using a variant of Schmeidlers question: "Do you believe it is possible that PK can be shown under the condition of this experiment?" For doing successful parapsychological laboratory work it seems necessary and consequent to document the belief or disbelief of the experimenter for further evaluations.

More than in any other scientific discipline the researcher and the experimenter themselves are part of the experiment they observe and analyse. Their expectations, hopes, fears, belief and disbelief are self-referential, they act as self-fulfilling prophecies (Watzlawick, 1985). They may influence the outcome of RNG experiments in the same manner as the attempts of the test persons to influence the random processes of the RNG. The experimenter, regardless of his beliefs, has probably the highest interest of all in the outcome of the experiment. Therefore he might be the most powerful psi acting agent - possibly against his own will.

The existence of anomalies or psi effects cannot be proven as we have seen. Everybody is likely to find evidence for his own belief. It is equally possible to gather strong evidence for the existence of psi like it is



possible to gather strong evidence for the null hypothesis. The one is true, and the opposite is true, too. Evidence in this case means only that belief or disbelief create their own corresponding results in the real world (Etzold, 1992). The answer for the question "Does Psi Exist?" (Parker, 2003) is undecided and has to be undecided as long as we have found no convincing evidence which might even satisfy skeptic doubts. Eberhard Bauer (1991, p. 138) states that in spite of all the skeptic doubts, parapsychology still belongs in the realm of science. For scientific acceptance now it is more important to say under which conditions the existence or inexistence of psi is falsifiable. Very general, the thesis, psi does not exist, is falsifiable if every human experience can be explained in conventional scientific terms. The thesis, psi does exist, is falsifiable if anomalous human experiences will be found which cannot be explained in conventional scientific terms. Bauer qualifies this by writing that parapsychology "does not seek to prove psi but instead wants to find explanations for a certain type of human experiences for which temporary was used the neutral theoretical term psi". (Bauer, 1991, p. 142). Parapsychology has to be considered a scientific discipline as long as human beings have experiences which can't be explained with the help of conventional scientific knowledge. However, this discipline has research approaches different from any other scientific branch. Against skeptic claims that no paranormal effects were ever replicated, we have to state that replications are possible. Parker and Brusewitz have given a list of successful research reports. The summarised results of parapsychological experimentation are indicative of an anomalous process of information transfer (Parker & Brusewitz 2003). Evaluating the state of belief/disbelief of the experimenters in connection with the experimental results might be another way for finding growing evidence. However, it is highly questionable that this will convince skeptics. We don't know actually what psi is. Perhaps all our models and reflections fall too short. Will the times of flying monks and ascending handkerchiefs return in future when the battle of skeptics and parapsychologists have finished, and teach us much more about the object of our research than we have learned in the last decades?

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#### REFERENCES

- Alcock, J. (1987). Parapsychology: science of the anomalous or search for the soul? *Behavior and Brain Sciences*, 10, 553-565.
- Alcock, J. (2003). Give the Null Hypothesis a Chance. Reasons to Remain Doubtful about the Existence of Psi. *Journal of Consciousness Studies*, 10, 29-50.
- Bauer, E. (1985). Gesang zwischen den Stühlen - oder wie fühlt man sich als „Parapsychologe“? In: Feyerabend, P., Thomas Chr. *Grenzprobleme der Wissenschaften* (pp. 367-373). Zürich: Verlag der Fachvereine.
- Bauer, E. (1991). Zwischen Devianz und Orthodoxie. Versuch einer Standortbestimmung der Parapsychologie. In: Eberlein G. *Schulwissenschaft - Parawissenschaft - Pseudowissenschaft* (pp. , 131-146). Stuttgart: Hirzel.
- Bender, H. (1966). *Parapsychologie*. Darmstadt: Wissenschaftliche Buchgesellschaft.
- Benz, E. (1969). *Die Vision. Erfahrungsformen und Bilderwelt*. Stuttgart: Klett.
- Etzold, E. (1992). Schafft sich der Glaube seine Wirklichkeit selbst? Religiöse Phänomene in konstruktivistischer Weltsicht. *Pastoraltheologie*, 81, 429-442.
- Etzold, E. (2000). Lunarperiodische und solarperiodische Einflüsse in Psychokineseversuchen. *Grenzgebiete der Wissenschaft*, 49, 149-174.(English: <http://bs.cyty.com/menschen/e-etzold/archiv/science/lunarpk1.htm>)

- Etzold, E. (2002). Sind die Daten der Fourmilab-Experimente mit der Mondphase korreliert? Ein Replikationsversuch. *Zeitschrift für Anomalistik*, 2, 76-90.
- Etzold, E. (2004). Ist die Existenz von Psi-Anomalien beweisbar? *Zeitschrift für Anomalistik*, 4, in press.
- Hergovich, A. (2001). Der Glaube an Psi. Die Psychologie paranormaler Überzeugungen. Bern: Huber.
- Hoebens, H. (1982). Die Legitimität des Unglaubens. In: *Zeitschrift für Parapsychologie und Grenzgebiete der Psychologie*, 24, 61-73.
- Hüsgen, I., Kamphuis, A. (2000). Hans im Unglück. Ein Bericht von der 43. Jahrestagung der Parapsychological Association. *Skeptiker*, 14, 199-203.
- Irwin, J. (1989). On Paranormal Disbelief: The Psychology of the Sceptic. In: Zollschan, G.K., Schumaker, J.F., Walsh, G.F. *Exploring the Paranormal: Perspectives on Belief and Experience* (pp. 305-312). Channel Islands: Guernsey Press.
- Jahn, R.G., et al. (2000). *Mind/Machine Interaction Consortium: PortREG Replication Experiments*. Research Report No. 1, April 2000. Freiburg.
- Jahn, R. G., Dunne, B. J., Nelson, R. D., Dobyns, Y. H., Bradish, G. J. (1997). Correlations of Random Binary Sequences with Pre-Stated Operator Intention: A Review of a 12-Year Program. *Journal of Scientific Exploration*, 11, 345-367.
- Lambeck, M. (1997). Können Paraphänomene durch die Quantentheorie erklärt werden? *Zeitschrift für Parapsychologie und Grenzgebiete der Psychologie*, 39, 103-116.
- Lawrence, T. R. (1993). Gathering in the Sheep and Goats. A Meta-Analysis of Forced-Choice Sheep-Goat ESP Studies, 1947-1993. In: Schlitz, M.J. *The Parapsychological Association 36th Annual Convention. Proceedings of Presented Papers* (pp. 75-86). Toronto.
- Lucadou, W. v. (1992). Makroskopische Nichtlokalität. *Zeitschrift für Parapsychologie und Grenzgebiete der Psychologie* 34, 201-216.
- Lucadou, W. v. (1997). Psi-Phänomene. Neue Ergebnisse der Psychokineseforschung. Frankfurt/Main: Insel.
- Lucadou, W. v. (2001). Hans in Luck: The Currency of Evidence in Parapsychology. *Journal of Parapsychology*, 65, 3-16.
- Lucadou, W. v. (2002). „Mitlaufen“ des MPI ist zu begrüßen. *Zeitschrift für Anomalistik*, 2, 82-84.
- Lucadou, W. v. (2003). Wie verschwindet Psi? Eine Erwiderung auf Volker Guiards „Bemerkungen zum Modell der Pragmatischen Information“. *Zeitschrift für Anomalistik*, 3, 138-142.
- Mann, T. (1983). *Über mich selbst*. Autobiographische Schriften. Frankfurt/Main: Fischer.
- Palmer, J. (1990). Haben wir Psi nachgewiesen? *Zeitschrift für Parapsychologie und Grenzgebiete der Psychologie*, 32, 6-18.
- Palmer, J. (1971): Scoring in ESP tests as a function of belief in ESP. Part I. The sheep-goat effect. *Journal of the American Society for Psychical Research*, 65, 373-408.
- Parker, A. (2003). We Ask, Does Psi Exist? But is this the right question and do we really want an answer anyway? *Journal of Consciousness Studies*, 10, 111-134.
- Parker, A., Brusewitz, G. (2003): A Compendium of the Evidence for Psi. *European Journal of Parapsychology*, 18, 33-51.
- Radin, D. (1997). *The Conscious Universe*. San Francisco: Harper.
- Radin, D.I., Rebman, J.M. (1998): Seeking Psi in the Casino. *Journal of the Society for Psychical Research*, 62, 193-219.
- Schmeidler, G. R. (1943). Predicting good and bad scores in a clairvoyance experiment: A preliminary report. *Journal of the American Society for Psychical Research*, 37, 103-110.
- Smith M. (2003). The Role of the Experimenter in Parapsychological Research. *Journal of Consciousness Studies*, 10, 69-84.
- Steinkamp, F., Boller, E., Bösch, H. (2002). Experiments examining the Possibility of Human Intention interacting with Random Number Generators: A Preliminary Meta-Analysis. Preprint, *Proceedings of the 45th Annual Convention of the Parapsychological Association*. Paris 5th to 8th of Aug. 2002.

- Varela, F. (1985). Der kreative Zirkel. Skizzen zur Naturgeschichte der Rückbezüglichkeit. In: Watzlawick, P. *Die erfundene Wirklichkeit. Wie wissen wir, was wir zu wissen glauben? Beiträge zum Konstruktivismus* (pp. 294-309). München: Piper.
- Watkins, M. R., Moore, P., Walker, J. (1996): The RetroPsychoKinesis Project. URL: <http://www.fourmilab.ch/rpkp/>
- Watzlawick, P. (1985). Selbsterfüllende Prophezeiungen. In: Watzlawick, P. *Die erfundene Wirklichkeit. Wie wissen wir, was wir zu wissen glauben? Beiträge zum Konstruktivismus* (pp. 91-110). München: Piper.
- Weizsäcker, E. v. (1974). Erstmaligkeit und Bestätigung als Komponenten der pragmatischen Information. In: Weizsäcker, E. v. *Offene Systeme I. Beiträge zur Zeitstruktur von Information, Entropie und Evolution* (p. 82-113). Stuttgart: Klett.
- White, R. A. (1976b). The limits of experimenter influence on psi test results: Can any be set? *Journal of the American Society for Psychical Research*, 70, 335-369.
- White, R. A. (1976a). The influence of persons other than the experimenter on the subject's scores in psi experiments. *Journal of the American Society for Psychical Research*, 69, 133-166.
- Wunder, E. (2004). Fragwürdige Prämissen zur Konzeption der Parapsychologie. *Zeitschrift für Anomalistik*, 4, in press.

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