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Message to our Readers

Welcome to the fifth volume of the *European Journal of Parapsychology* to be produced from Edinburgh. Once again, the journal has an international feel to it, with papers from Brazil and Fiji, as well as Scotland and England. May we remind you that the journal will not exist without *your* support, both in terms of maintaining your subscription payments, and in terms of submitting items for publication in *EJP*. Any papers, reviews, comments, and letters are most welcome.

Once again, we are very proud to be able to provide for each article abstracts translated into six foreign languages. This would have been impossible without the generous help of certain individuals who, each year, have rapidly responded to our last-minute requests for translation. We are therefore extremely grateful and indebted to: Hans Michels (Dutch); Gerd Hövelmann (German); Fátima Regina Machado and Wellington Zangari (Portuguese); Michel-Ange Amorim (French); Carlos Alvarado (Spanish); and Massimo Biondi (Italian). We hope our international readers find this service helpful.

As a further service to our readers, we have a new feature in Volume 12: English language abstracts from two European journals: *Zeitschrift für Parapsychologie und Grenzgebiete der Psychologie* (Germany) and *Quaderni di Parapsicologia* (Italy).

We would also like to thank all the anonymous referees whose careful considerations have improved the quality of the articles we publish. Finally, of course, we thank all the authors who have contributed their work and without whom there would be no journal.

The *European Journal of Parapsychology* is jointly produced by an Editorial Team. For Volume 12, Caroline Watt coordinated the team, did copy editing and part of the desktop publishing. We have been fortunate to be joined this year by Fiona Steinkamp who has helped us advertise the journal, maintained the subscription list, and did the bulk of the desktop publishing. Deborah Delanoy and Robert Morris have assisted in the handling of articles and Helen Sims handled the financial side of the journal. The journal is printed by the University of Edinburgh. ISSN: 0168-7263.

We hope that this journal will stimulate interest in parapsychology and will promote communication between parapsychologists.

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Training Imagery Skills for Enhanced Psychic Functioning: Two Experiments with Athletes

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Abstract: Parapsychologists have in the past stressed the link between imagery and psi. There has been a considerable amount of experimental literature on this facet of psi and the results are promising but equivocal (George & Krippner, 1984). It is not clear whether training imagery improves psi ability or has no effect. This paper reports on two experiments that trained imagery in athletes to see if they could use their hypothesised increased imagery ability to improve their PK performance. Consistent results across both experiments were that participants who had been given more imagery training showed higher PK scores than those who had less training. Positive correlations were also found between self-rated imagery scores and PK scores over the same period. There was also a weak correlation between a change in imagery over the experimental period and the change in PK scores over the same period. There are however some additional analyses that give a more complex picture of the relationship between imagery and PK. Alternative explanations discussed are: there exists a ceiling effect of imagery on PK performance; motivation or willingness to do well in PK tasks may be an important contributor to PK scores.

Imagery and Psi Scores

Surveys suggest the largest proportion of spontaneous psychic experiences occur in a visual or auditory imagery mode, or even a combination of the two (Green, 1960; Rhine, 1978; Schouten, 1979, 1981, 1982; Kohr, 1980). This is as opposed to psychic information being obtained in an intuitive mode, that is without any sort of imagery where the participant just 'knows' some sort of information (Rhine, 1978). White (1964) reported that 'gifted' ESP participants stressed the importance of imagery (e.g., Sinclair, 1930 & 1962). As a result of this anecdotal material there have been numerous attempts to study the relationship between psi and imagery in controlled experiments. George & Krippner (1984) comprehensively reviewed the experimental literature relating imagery and psi and found that whilst the results are generally equivocal, there is some experimental evidence that a goal directed imagery strategy appears to be more productive than process oriented imagery for a PK task (Morris, Nanko, & Phillips, 1982; Levi, 1979; Morris, 1980; Nanko, 1981; Gissurarson, 1989).

A variety of theoretical reasons have been proposed as to why imagery may be important in the psi process. Two of these are discussed here. 1. The 'two stage

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model' first advocated by Tyrrell (1947) states that psi involves a two stage process whereby psi information reaches our unconscious by unknown means, but we become conscious of these effects through mediating vehicles such as imagery. Although the model was advocated more for ESP effects, it is possible that a conscious desire to alter the environment might be mediated to the unconscious psi mechanism via the same mediating vehicle of imagery. 2. The 'lability hypothesis' that Braud (1981) proposed is an attempt to reconcile psi effects and the second law of thermodynamics. Briefly, it involves counterbalancing the lability of two systems that will interact with each other psychically. Highly labile mechanisms may come to resemble the labile system of a PK agent if the latter system becomes highly structured and inert. In other words the vivid and persistent image of a desired goal (the brain's labile state becoming highly structured) will bring about a change in another labile system (such as that of a micro-PK system).

Training Imagery

Schmeidler (1987) has pointed out that a continuum of psi may be the best way of thinking about the differences between ESP and PK. At one end would be pure ESP, in the middle a mixture of the two, and finally at the other end pure PK. This continuum is one of the approaches taken in this paper. Therefore the paper does not directly tackle more esoteric and presently hard to test differences between ESP and PK [such as whether ESP is really 'super-PK' abilities (Braude, 1991), or micro-PK is not really ESP in the vein of decision augmentation theory (DAT; May, Utts & Spottiswoode, 1995). Hence this paper sees the use of research traditionally ascribed to as ESP as being pertinent in this line of 'PK' research.

If imagery is important for eliciting psi effects, then the rationale that imagery training should increase psi effects seems justified and certainly at least two theoretical models of the relationship of imagery to psi (the two-stage model and the lability hypothesis), suggest that training might improve the psi scores. Furthermore White (1964) has pointed out that early 'gifted' psychics practised their imagery skills diligently and Morris (1977) found that one of the most common methods advocated by many 'teach yourself to be psychic' books, was to improve one's imagery. However, most experimental studies have found no relationship between imagery training and psi scores (Mockenhaupt, Roblee, Neville, & Morris, 1977; Morris & Hornaday, 1981). One of the studies (Morris, Roblee, Neville & Bailey, 1978) found a significant decline in psi scores over time; this is obviously counter to the training hypothesis.

In two of Morris's studies an attempt was made to measure the participant's visual imagery ability. This was done either through a questionnaire (Morris & Hornaday, 1981), or from blind judges' ratings, on a 200 point scale, of the imagery abundance of participants' mentation reports (Morris & Bailey, 1979). No significant relationships were found in either study. George & Krippner (1984) criticise these experiments because researchers had not ascertained if the participant's imagery training was effective (i.e., did the imagery ability increase). If it had not increased then we would not expect to see an increase in psi scores due to the use of imagery.

George (1982) conducted imagery training sessions and tried to measure the increase in imagery ability with respect to ESP tasks. There was a weak indication that the imagery training may have had a beneficial effect on the subsequent ESP scores, although other explanations were possible. He found that those who practised their imagery homework exercises more improved their psi scores, although he points out that this could be due to a motivational effect. Braud (1983) did a similar training study to George (1982), except the psi task was a micro-PK task. The training programme over six weeks was a slightly modified version of George's imagery enhancement training programme. As well as twenty minute weekly exercises in the laboratory, Braud asked his participants to do homework exercises. The imagery exer-

cises focused on eliciting colour imagery. The PK task was to keep a red lamp turned on for as long as possible (the decision to turn it on or off was decided by an RNG). The imagery task used to try and affect the PK score was to image the warm glow of a setting or rising sun. Imagery questionnaires [Paivio's IDQ (Paivio, 1971), Marks' VVIQ (Marks, 1973) and Gordon's control of imagery questionnaire (Gordon, 1949)] were filled out by the participants both before and after the training. All the questionnaire scores improved over time although perhaps due to the low power of the experiment (Braud only had seven participants), only the IDQ change was statistically significant. The results showed that the PK scores improved from pre- to post training (Cohen's d = 2.84), and the post training score was significantly above mean chance expectation (MCE). However, there were no significant correlations between the improvement of self-rated imagery (for any of the questionnaires) and the improvement of the PK scores. Braud did find a large and significant correlation between the amount of time spent on homework and the increase in psi scores (r = 0.84). His main conclusion for successful use of imagery to elicit psi is 'practice, practice, practice the visualisation exercises'. Also, in his opinion the key to success is that the visualisation task should be as similar as possible to the feedback of the PK task (personal communication 1989).

Gissurarson (Gissurarson, 1989; Gissurarson & Morris, 1995) also researched the effect of using imagery strategies to improve PK performance. His participants practiced a particular 'volitional' or 'conative' imagery style such as imaging the visual feedback for a hit (goal oriented imagery), a build up of 'energy to force the computer to choose a target (process oriented imagery) or visualising the final 'hit' score that the computer would display (end process imagery). This may be thought of as a very initial attempt at training imagery. Unlike George or Braud, Gissurarson did not attempt to measure the change in imagery ability (this was not his main research focus). He found no overall PK effects nor did he find any PK effects attributed to any particular volitional strategy.

Summary

Anecdotal and non-experimental literature recommends using visual imagery as a mental technique to obtain PK effects. Although the previous experimental literature on the effectiveness of using an imagery strategy is equivocal, the results from some of the experiments support the notion that imagery is an effective strategy to enhance micro-PK performance. With regard to imagery *training*, although there seem to be good anecdotal and theoretical reasons to suggest that imagery training might increase a micro-PK effect, the experimental support for this is very weak. However, the majority of the studies did not ascertain if imagery skills had indeed increased after training.

The following experiments tried to replicate the training effect found by Braud (1983) who did measure imagery scores over the training period as well as measuring psi scores. I felt this was especially desirable because there appears to have been little reported work done in this area since the early 1980s and some more recent work by Gissurarson between 1987 and 1988. The training studies would take both a pre- and post-training imagery score to see if participants' self-reported imagery had improved over the training period. The task for both experiments would also be made as ecologically valid as possible. One of the easiest ways thought to achieve this was to have participants' visual feedback represent an activity with which they were very familiar. However, there is a price to pay for research that emphasises ecological validity, namely the statistical power of the experiments is very low. The results of this type of research are not advocated as definitive answers - rather they are offered as possible interesting indicators for future research.

Table 1
The general design of the training schedules for the two groups in the experiments.

	'Experimental Group'	'Control Group'
First half of the training	Imagery training	Placebo training
Second half of the training	Imagery training	Imagery training

Training Imagery for a Micro-PK Task

The general design of the experiments

In order to test the hypothesis that imagery training increases PK scores, it was decided to have two experimental groups (for convenience, denoted as the 'experimental' and the 'control' group). One of the groups (the experimental) would receive imagery training throughout the experimental period. The other group (the control) would receive a placebo training regime for the first half of the experimental period and for the last half they would received the same imagery training as the first group. This procedure was chosen because of considerations for another experiment in which the participants were involved (Taylor, 1992). Notice that although the terms 'experimental' and 'control' groups have been used, both groups receive imagery training, only the 'experimental' more so than the 'control'. The general design is summarised in Table 1.

It is often difficult to interpret psi results with respect to mean chance expectation (MCE). Palmer (1975) described this problem in detail: researchers can make assumptions about the deviation away from MCE to present their results in the best possible light. For instance absolute deviation away from MCE (in either the positive or negative direction) is seen as demonstrating more psi. An alternative assumption is that deviation in the positive direction is seen as more indicative of psi. Finally a third assumption is that there are two factors that operate at anyone time. The first factor which may be akin to experimental 'atmosphere' sets the overall level of psi scoring, the second factor is due to individual or group differences. Palmer (1975) have pointed out that the latter model is more complicated than the other two, however, I feel that it also has more merit. Particularly when interpreting training results, there may appear to be several contradictory conclusions depending on whether the results are close to MCE and on which 'direction' they are with respect to MCE. For instance, consider results that were at or just above MCE but not statistically significant in a pre-training condition. In the post-training condition these may become statistically significant but below MCE (i.e., showing psi missing). This might be interpreted as being evidence of a 'training effect'. However, the training has produced results in the wrong direction. Is it therefore justified to say that the training was 'successful'? I would argue that this potential scenario is not evidence of 'successful' training. Bearing in mind that these were to be training studies, Palmer's third model actually seems to make better conceptual sense. Whatever, reason(s) may exist for an individual to be a 'psi-misser' - it only seems to make sense to say that the training was 'successful' if that individual subsequently becomes less of a psi misser, or more of a psi hitter - even if this means that scores approach a real or theoretical MCE. It was therefore decided beforehand only to look at the differences of PK scores between the groups. If the experimental group's scores were higher than the control's, then this was deemed a positive result; note that this is

regardless of the scores' respective position to a real or theoretical MCE[1].

The General RNG-PK Game Engine

The use of electronic equipment to conduct micro-PK games has been well documented (Radin & Nelson, 1989). Whilst this equipment is an excellent research tool for collecting large amounts of data quickly, with little opportunity for cheating or bias (McCarthy, 1981), it does run the risk of trivialising parapsychology to very artificial experimental effects (Braude, 1991; Williams Cook, 1991). Honorton (1980) has pointed out the success of video arcade games, and this novel and interesting way to present the psi task can also frame the task in a meaningful way to the experimental participant. The RNG-PK experiments described below used athletes with whom I was involved in other experiments assessing mental strategies to improve their athletic performance (Taylor, 1993a). Briefly, the athletes were asked to influence a simple computer animation whose outcome depended on an RNG. Efforts were made to present the athletes with a meaningful PK task by making the RNG output display animations specific to the athlete's own sport.

The general sequence of the computer program for the PK task can be described thus:

- The program asks the participant for their name, then displays a short instruction reminding them to use their relevant mental strategy in order to affect the program.
- The computer displays a short starting sequence of animation.
- At the end of this animation sequence the program chooses a random number (normally one of two numbers). The number is determined pseudo randomly via the computer's built in algorithm. Apple's technical information library states that Applesoft's RNG's algorithm is seeded once during the system boot up. This information is contrary to what was believed both during the running of the experiment and in a subsequent paper presented at the 36th Parapsychological Association Convention (Taylor, 1993b).
- The result of the pseudo-RNG determines which animation, from a number of alternative second sequences, should be displayed. In principle the observer would be unaware of this decision process and the two sequences should appear as one uninterrupted sequence. In practice however, hardware speed restrictions invariably mean a pause ensues whilst the next animation is chosen.
- More than one of these steps is commonly used to make a complete animation sequence (i.e., several random numbers are generated for one ostensible trial).
- At the end of the participant's session the random numbers are recorded to the hard disk and a floppy back-up disk.

This rather elaborate procedure was taken for several reasons.

Firstly it gave the impression of a real-time aspect incorporated into the display; this was seen as more desirable than a set up where prior to the trial's initiation, the required random numbers are all generated and from this an appropriate complete animation is selected. Secondly more RNG trials can be sampled in the one ostensible trial.

Experiment 1: Gymnastic Vaulting as a Micro-PK Game

Participants had been recruited on a voluntary basis to take part in a study concerning the effect of mental rehearsal on their athletic performance (Taylor, 1993a). This experiment used gymnasts and was run in their gymnastic hall during the gymnasts' normal training session. This

[1] As a methodological note, no dummy runs were conducted with the RNG used in the two experiments. One referee has pointed out that this is a potential weakness in the design of the study. However, the impact of this flaw is reduced because the analyses compare the experimental group with the control group, rather than comparing both against a theoretical MCE.

was thought to be a more practical use of time rather than taking the athletes to the psychology department which might have been slightly intimidating for some of the athletes (who initially volunteered to train for their sports performance and not to work with computers in academic buildings). Testing took place in five sessions over 10 weeks (roughly once a fortnight). There were two groups of participants, one of which (the experimental group) received more imagery training than the other (the control group). For the first half of the experiment both groups of participants were asked just to use any mental strategy that they felt comfortable with. For the last half of the experiment when all the participants had been trained in imagery, they were all asked to use an imagery strategy specific to vaulting, that they had learned in their imagery training exercises. The game (described below), took about five minutes to complete.

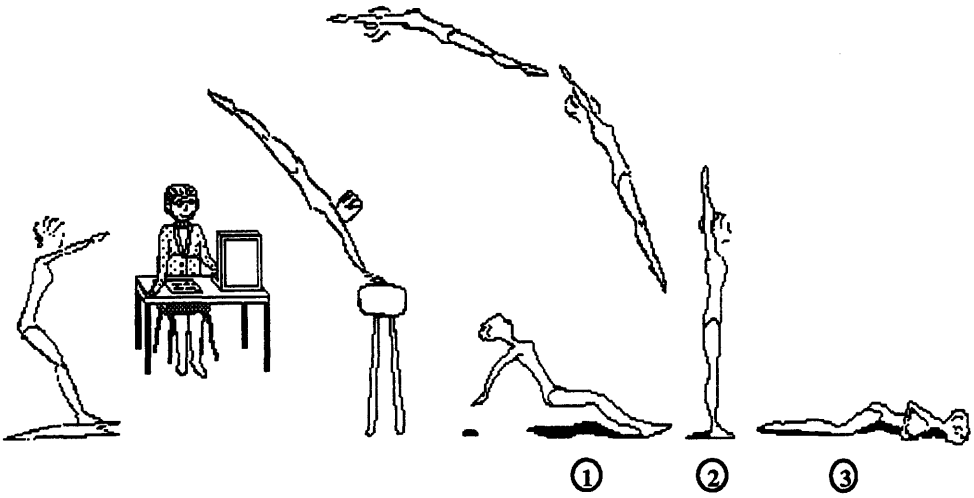
Materials

- Imagery was measured using the Movement Imagery Questionnaire (MIQ). This consists of two sub-scales on the vividness of visual and kinaesthetic imagery (validation details for this scale can be found in Hall, Pongrac, & Buckholz, 1985). This questionnaire was chosen mainly because of considerations relating to the sports experiment that the participants had done.
- Apple™ Macintosh SE, I MB RAM, 40 MB Formac™ hard disc and a 'mouse'.
- An Aries™ spike protector extension cable.
- Small diaries for participants to record the frequency of use of the imagery exercises.
- A mini-lab was constructed using two trampoline beds that folded in an upright position to form effective barriers. This allowed some degree of privacy and allowed the gymnast to concentrate on the task and not to become distracted. A padded mat allowed participants to sit in front of the computer without getting too cold or uncomfortable. A chair was used to place the computer on, so that the screen was at eye level.
- Micro-PK game 'Jessie': The game tried to simulate a fictitious girl gymnast 'Jessie' vaulting a 'horse' (a piece of gymnastic apparatus). There were seven stages at which the program requires an RNG to complete the animation. Six of these closely correspond to real decision points in the actual physical movement. They are: running towards the horse 1 (fast/slow), running towards the horse 2 (fast/slow), jumping onto the springboard (low/high), jumping off the springboard (low/high), leaving the horse (high/flat) and the amount of rotation (on her back/ with a step back/ perfect landing/ with a step forward/ on her face). Figure 1 shows various clips from the animation. The end of the animation shows three possible outcomes: Jessie lands on her back, or lands on her feet , or she falls on her face.

The chances of each decision point were independent of each other. In addition, feedback was given for the whole of the vault by a score given as a judge would score the vault. The scoring was worked out using FINA regulations (this is the international body that controls the scoring system for Olympic and world championships). The final score was also randomly increased or decreased by 0.05 points or remained the same, to simulate judge subjectivity.

The program was developed in conjunction with the gymnasts' coach, so an expert could adjust the animation to make the simulation as realistic as possible in terms of flight, angles of take off and speed of rotation. Each participant tried to influence ten vaults which meant that for each session (60 x 10) ostensible RNG decisions were to be modified (the final RNG that altered the final score by 0.05 was not used in the final analysis). Results were stored automatically both to the computer hard disc and to a floppy disc.

Figure 1
Composite out takes from the animation PK-RNG game "Jessie" showing a sequence with three final outcomes ①, ②, or ③.



On-line 'help' was built into the program to help the participant to enter their name and the vault category (there was a choice of doing a handspring, squat through or a tsukuhara) that they were going to see. No keyboard was present and the whole program was initiated and driven by a 'mouse'. Most of the participants had worked with computers either at home or at school. None of the participants expressed a fear or concern about working with a computer. Only one of the participants had any experience with a Macintosh computer, and she claimed not to have had any experience of the programs used in the game's construction. Hence, despite participants' familiarity and ease of working with computers, it was exceedingly unlikely that any of them would be able to alter the program or modify the results without my knowing it (the only feasible way for any of the participants to break out of the program would be to crash the computer deliberately, in which case I would become aware of the event).

Imagery Training

For imagery training, I developed five cassette based exercises. These allowed the athletes to do the exercises at their convenience and in the comfort of their own home. Each exercise was preceded by the same relaxation exercise which was simply to breathe in and out deeply and become more and more relaxed with each breath. The first exercise was a guided imagery tour around their own home. The second was an exercise comparing their true vision of a hand-held object (a mug was recommended) and their mental imagery of the same object. Participants were asked to flick between their vision and imagery and try to concentrate on specific aspects of the object such as shape, colour and texture. The third exercise alternated executing a simple movement (such as raising one's arm) and then trying to imagine the same movement kinaesthetically. The last two exercises were specific to gymnastics and both were guided imagery scripts relating to executing a good vault. The difference between the two exercises was in the participants' guided imagery perspective

whilst imaging their vault: 1. seeing the vault as if they were inside their bodies doing it; or, 2. being someone else seeing bodies do the vault. These were exercises four and five respectively. Each exercise lasted about 5 minutes. It was stressed that the training would only work if participants tried to do on average four of these exercises a week. A single cassette contained all the exercises. Initially participants were to concentrate on the first three exercises. Once they felt confident with these, they were then to concentrate on the last two exercises. Therefore the imagery training was self-paced. Participants were also asked to record every time that they completed an exercise in a small diary that they were given.

Control Training

A similar cassette based training exercise as the imagery training was constructed. Five exercises were each preceded by the same relaxation exercise as above. There then followed a short 3-4 minute piece of pleasant but not too arousing music. Participants given this training were also given the strong impression that the music contained subliminal suggestions to improve their vaulting even though this was not the case. This was done to control against expectation of success.

Participants

Twenty two female participants from the ages of 8 to 16 years old were recruited on a voluntary basis from the Meadowbank Ladies Olympic Gymnastic Club. Their ability ranged from almost novice to junior international standard.

Methodology

The equipment was set up at the beginning of the session in a way that was as consistent from session to session as I could make it. Participants were matched for gymnastic ability but otherwise randomly split into the two groups (experimental and control). All participants were asked to fill out the MIQ at the beginning and again at the end of the study. Both groups received the imagery training and differed only in their time of starting the training. This was done for ethical reasons in that every participant would receive the training that was believed to be beneficial to their sporting performance. Throughout the experiment the participants from a particular training regime were not aware of the training regime of the other group, although they knew it was different. All participants were politely asked not to tell members of the other group about the exercises that they were doing, with an assurance that this would be revealed after the experiment. During the sessions when the PK game data was being collected, the gymnasts took time out of their normal training routine to play the game. They were instructed to put on extra clothing to stay warm and therefore reduce the risk of injury when recommencing with their normal physical training after a period of inactivity doing this experiment. For the gymnast's first session I sat for a while with them to explain what the program was about and to help them set up the program correctly and run it properly. Thereafter I left them to finish their session in their own time. For the remaining sessions they were able to proceed on their own with the set up and running of the program.

In terms of trying to alter the performance of the pseudo RNG, I asked the gymnast to try to will the girl on the screen to do the correct movements. Initially the instructions as to what mental strategy they might use were deliberately left as vague as possible in order not to bias their preconceptions about how they might try to exert their 'will'. In the latter half of the experiment all the participants were asked to use their imagery as they had been using in mental rehearsal for their actual performance.

Scoring

The scoring used for the statistical analysis was different from that used in the feedback actually given in the game (i.e.,

the scoring was not FINA regulations scoring). If the animation showing a better movement was played at any particular step (e.g., 'Jessie' landed straight on her feet) a single point was scored.

Design

All analyses were pre-planned except where specifically indicated below. Analyses were conducted between two sample groups (experimental and control), matched for gymnastic ability. Testing occurred approximately once a fortnight, for five sessions. Participants played the game once for each session. For the first three sessions the experimental group was given imagery training and the control group was given a control training regime. This was the 'first half' of the study. During these sessions participants were not asked to use any particular mental strategy. For the last two sessions, the control group was also given the training and all participants were asked to use imagery as a strategy to affect the PK game. This was the 'second half' of the study. Unpaired *t*-tests were calculated along with effect sizes (Cohen's *d*). All *p* values shown are one-tailed.

The hypotheses were as follows:

- The group that received more imagery training would score overall significantly higher at PK than the group receiving less imagery training.
- A positive correlation would exist between imagery ability and PK score.
- A positive correlation would exist between the change in imagery ability over the training period and the change in PK scores over the same period.
- A positive correlation would be found between the PK scores and the frequency of use of the imagery exercises, as noted in participants' training diaries.

Results

Although participants were encouraged to come to each of the sessions for testing, this was not always possible; for instance, on the first scheduled session only half the number of participants showed up. Before looking at the data, and before the analyses took place, it was decided that the scores for this session should be abandoned. There are thus two sessions when none of the participants were asked to use any particular mental strategy to affect the PK game and the control group had no imagery training. For the final two sessions, all participants were asked to use an imagery strategy and the control group had also had some imagery training although not as much as the experimental group. Differences in the degrees of freedom (reflecting the number of participants in each session), vary because of the different ratio of experimental to control participants during each session. For similar reasons of (un)availability, not all participants were present to fill out the MIQ at the end of the experiment.

Imagery PK vs. control PK. An unpaired *t*-test between the two groups' PK scores just failed to reach significance at the $p = .05$ level in the predicted direction ($t = 1.621$, df = 20, $p = .06$), that is the imagery group scored higher than the control group. The effect size (Cohen's *d*) between the two groups was .68. Therefore, the hypothesis that the group with more imagery training would score higher at PK than the control group, is supported and just failed to reach significance.

Imagery ability vs. PK. Correlations between self-reported imagery ability over the two training periods were computed with the PK scores for the same periods. All correlations were in the correct direction although only the visual sub-scale in the first MIQ was close to significance. For the pre-training questionnaire the correlations for the overall, visual and kinaesthetic sub-scales were respectively: $r = .21$, $r = .32$ and $r = .19$ ($N = 19$). For the post-training questionnaire the correlations were: $r = .10$, $r = .31$ and $r = .004$ ($N = 14$). Therefore, the hypothesis that the PK scores would correlate with the imagery questionnaire and its sub-scales, is supported but not significantly so. Visual imagery appears to be a stronger predictor of PK performance than

kinaesthetic imagery. A post hoc paired *t*-test between the last two sessions' mean PK game scores and the mean game scores of the first two sessions from the analysis, was not significant but was in the predicted direction ($t = 1.304$, $df = 18$, $p = .10$). That is, the PK scores towards the end of the training were higher than at the beginning. However, the change is larger for the control group than the imagery group. Graph 1 illustrates that the main change is from the PK scores of the control group in the first part of the experiment to the second part. The magnitude of the PK scores of the control group appears to have caught up with the imagery group. The imagery group's scores remained relatively stable over the course the experiment.

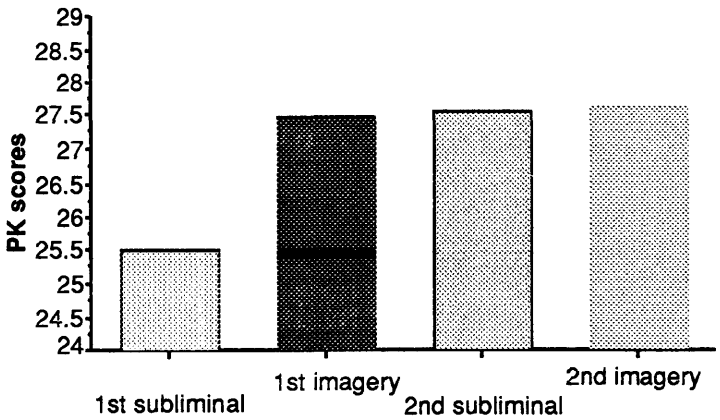
Change in imagery ability vs. change in PK. None of the correlations between the change in self-rated imagery and in the change in PK scores was significant. The largest correlation was for the change in kinaesthetic imagery. For overall imagery ability, the visual and the kinaesthetic subscales respectively, $r = .13$, $r = .04$ and $r = .20$ ($N = 12$). Therefore, the hypothesis that a change in imagery over the training period is correlated with the PK scores, is supported but not significantly so.

Amount of imagery practice vs. PK. The correlations between overall mean PK game score and frequency of homework exercise use (from participants' diaries) showed a significant correlation in the predicted direction ($r = .63$, $N = 15$, $p < .01$). The diary recorded the frequency of homework exercises done regardless of the type of exercise done (imagery or control). A correlation was also calculated between PK and the use of the exercises that were specific to imagery; this is marginally higher than the overall correlation and is also significant ($r = .64$, $N = 15$, $p < .005$). Therefore, the hypothesis that PK scores would correlate with the amount of homework done, is significantly supported. The correlation was also computed post hoc on pre- to post- training improvement in PK scores and the use of the diaries. It was significant for the overall use of the exercises, that is for both the imagery and the control exercises ($r = .55$, $N = 14$, $p < .025$). It was positive but not significant for the imagery specific exercise, ($r = .31$, $df = 14$). The results would therefore suggest that the main contribution from the homework exercises with regard to increasing PK ability may not necessarily be solely from learning imagery specific exercises. Instead it may also relate to some unmeasured variable such as motivation, or willingness to do homework exercises.

Discussion

These analyses did not directly test the question of whether an imagery strategy was better than a non-imagery strategy. However, given that the group that had the most imagery training scored higher overall at PK, the results can be regarded as being a replication of the previous research showing that imagery is a superior strategy to a non-imagery one. The picture becomes complicated, though, when looking at the change in PK scores for each group. It appears that the control group increased their PK scores more than the imagery group (see graph 1). This might suggest that the PK training effect is not due to an increase in imagery ability. Rather what we see in the data is the transition of the control group from not using imagery as a mental strategy in the first sessions, to one where they do use it. One could postulate that the imagery group must have, without prompting from me, used a imagery strategy. This is possible if they were primed to use it because of the specific imagery training exercises they were doing.

Graph 1
Showing the change of PK scores over time for the control and the imagery groups. For the first half of the experiment neither group was asked to use any particular strategy. In the last half, all participants were asked to use imagery.



The correlations between the PK scores and the imagery questionnaire (and its subscales) were all in the predicted direction although the main correlation seems to be with the visual sub-scale. There were some positive but non-significant correlations between the change in imagery ability and the change in PK scores, however this was largest for the kinaesthetic scale and not for the visual scale. The high correlation between the frequency of doing the homework exercises and the PK scores replicates the results of both George (1982) and Braud (1983). However, the correlation between the change in imagery and the change in PK scores, whilst still positive for the imagery-specific exercises, was not nearly so high as for all the exercises. Although caution should be exercised for such a low powered study, perhaps the correlations indicate general motivation or enthusiasm for developing a mental skill is an important indicator of PK success. These results may provide some additional support to George's (1982) conjecture that positive correlations with psi scores and the amount of homework exercises done, may be due to a motivational effect, because in this experiment steps were taken to include a control group with an equal expectation of success of their control training strategy as the experimental group training for imagery skills.

Experiment 2: Small Bore Shooting as a Micro-PK Game

This experiment into training imagery was conducted with the University of Edinburgh's Alumni small bore shooting club. A PK study was planned to run immediately after a sports improvement study (Taylor, 1993a) but before participants received feedback from the latter. For logistical reasons it was not possible to take pre-training PK scores. Hence the PK scores are all post-imagery training scores. Again, as in the gymnastic study, half of the experimental participants would have had approximately twice as much imagery training as the control group. A new PK game was constructed to be meaningful for shooters.

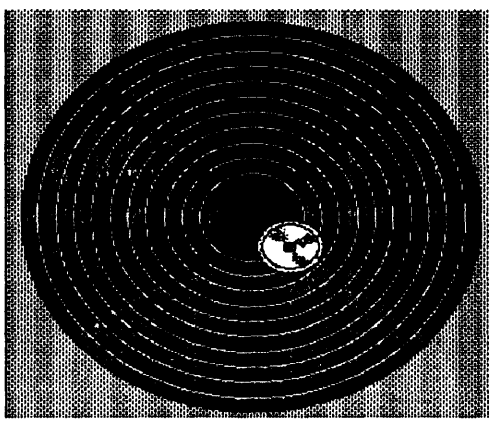
Participants

Thirteen participants were recruited on a voluntary basis from the University of Edinburgh's Alumni small bore shooting club. There were nine males and four females with ages ranging approximately from 20 years of age to 40 years of age. One of the females dropped out of the study for reasons unrelated to this study and prior to any data collection. The ability level of the shooters ranged from national to international standard.

Materials

- The Movement Imagery Questionnaire (MIQ).
- Apple™ Macintosh SE, 2.5 MB RAM (upgraded from 1 MB RAM), and a 40 MB Formac™ hard disc.
- An Aries™ spike protector extension cable.
- Small diaries for participants to record the frequency of use of the imagery exercises.
- Small Bore Micro-PK Game. The game was constructed with the following elements. At the start of the game the participants had to influence a fictitious shooter shooting in the computer environment's 'shooting range', to lower the fictitious shooter's breathing and heart rate. This was depicted by trying to get two column indicators representing the breathing and heart rate, to fall below a highlighted threshold. The rate of falling was determined by an RNG (the RNG was the same as that used in experiment 1). The intention, as in real life for shooters, was to make the rate fall as quickly as possible. The game would not proceed until this had been achieved. Subsequently, the participants pressed the mouse to indicate that they were ready to 'fire' a shot. They would then see the tail end of a bullet spinning towards a target. It would 'wobble' towards the target to finally hit it and the participant would be given the score that they got on that 'shot'. The participant's goal was to get a good final score. They could achieve this through a variety of methods, either by having the shot make large deviations away from the centre only to return towards the centre before it hit the target, or to have little deviation away from the centre during the course of the bullet's 'flight' (i.e., different flight paths made no difference to the final score). Participants completed 8 shots in total. The view of the target and the rear of the bullet is shown in Figure 2.

Figure 2
Out takes from the shooting PK-RNG game. The participants would see the tail end of the bullet (straddling the bullseye) which in the animation would be spinning.



Imagery Training Exercises.

The imagery exercises were the same initial three exercises as in experiment 1. In addition, there were three exercises that took a Zen-like approach: imaging an extended tube leading from the end of the rifle to the target (exercise 4), the shooter becoming one with the rifle/firing point (exercise 5) and finally trying to lose awareness of the flow of time (exercise 6).

Procedure

The imagery training occurred before the start of this experiment. The MIQ was handed out before the session for the participants to fill out in their own time at home sometime before the experiment and before they received their imagery training. The MIQ was also handed out a second time after their imagery training but before the PK experiment. None of the MIQ scores was calculated until the complete data collection for the experiment was finished. At the start of a PK session a 'mini-lab' was set up in a conference room in the University's sports complex. The room was quiet except for muffled thumping and banging from a basketball club playing directly above the room. None of the participants complained or commented that this disturbed them. The computer was set up in a corner of the room with the aim of making the setting as comfortable as possible. Participants played the game for three sessions. It was felt the game was quite complex to understand and there was a danger that the participants might not understand exactly what I was asking them to do. To try and obviate this problem all of the participants played a simple PK game before they attempted to use the shooting PK game. The simple game was the computer equivalent of the apparatus described by Placer, Morris & Phillips (1977), which was a display of a circle of lamps, one of which would light up in a random walk around the circle. Anecdotally, I think that this strategy paid off because, despite my trying to tell the participants what it was they were trying to do, many (about half) did not fully appreciate the task until they realised that they could not play the game using physical means such as manipulating the keyboard or mouse.

The following sessions after their introduction to micro-PK tasks, participants played the PK shooting game proper. For their first shooting PK game I would sit in and show them how to start up the game and give them a brief introduction of what to expect in it. I then left them alone to play the game. In the following sessions they would start up and play the game by themselves. Testing ran on the club's training nights over five weeks.

Scoring

The method of calculating the PK score was as follows: the number of steps that it took for the breathing and heart meters to fall below the threshold level was summed and added to the horizontal and vertical units away from the centre of the target. The smaller the final number, the higher the PK score. A lower final number meant that they had made the computer's depiction of heart and breathing rates fall quicker, and the bullet hit closer to the centre of the target.

Design

Participants were split into two groups, one (experimental) had twice as much imagery training as the other (control). Note that unlike the vault study, all PK sessions occurred after the imagery training for both groups had finished. It was therefore not possible to record the change in PK scores over the training period. The hypotheses were as follows:

- The imagery group would score more positively on their PK scores than the control group.
- Correlations of the MIQ and its sub-scales with the PK scores would be positive. The correlation would be largest for the visual sub-scale.

- Changes in MIQ ability would correlate positively with higher PK game scores.
- PK scores would correlate with the amount of homework exercise done.

The *p* values reported are one tailed.

Results

Due to other commitments (i.e., not related to dissatisfaction with the experiment) not all the participants managed to play three games. It was decided before the analysis (i.e., before any of the scores were known by myself) only to take data from the participants who played at least two games. In part, my reasoning was that these participants presumably took the study more seriously.

Unlike the gymnastic study all the results of this experiment relate to the time after the control group had also received imagery training. Therefore these results reflect more the differences between the group's respective length of imagery training.

Imagery PK vs. control PK. An unpaired *t*-test between the imagery and the control group is not significant but reveals that the imagery group scored in the predicted direction ($t = .122$, df = 8, $p = .45$); the effect size (*d*) is .08. Therefore the hypothesis that the imagery group would score higher at PK than the control is supported but not significantly so. The magnitude of the effect is considerably smaller than in the gymnastic study.

Imagery ability vs. PK. The correlations between the imagery scores after the imagery training and the PK scores are not significant but in the correct direction for the post-training questionnaire ($N = 8$, visual sub-scale, $r = .36$; kinaesthetic sub-scale, $r = .34$; total MIQ, $r = .47$).

Change in imagery ability vs. overall PK. Unlike the gymnastic study, no PK game was played before or near the beginning of the imagery training so that no correlation could be calculated between the change in PK game scores and the change in imagery ability. However, it was decided that a similar analysis would be to calculate a correlation between the change in the self-reported imagery ability and the overall PK scores [this is actually the same analysis as reported by Braud (1983)]. The correlations were in the right direction and for the total change in the MIQ and for the visual sub-scale significantly so ($N = 8$, $r = .69$, $p < .05$ and $r = .65$, $p < .05$ respectively) and not significant but still high for the change in kinaesthetic imagery ($r = .58$). The hypothesis that a change in the self-reported imagery questionnaire scale and its sub-scales would be correlated with PK scores, is supported, significantly so for the change in the visual sub-scale.

PK scores and homework. The final hypothesis could not be tested because not enough participants handed back their diaries (only 2 were handed in) recording the frequency of use of the homework exercises.

Discussion

The difference between the imagery and the control group was once again in the predicted direction, although the effect ($d = .08$) was not nearly so large as in the first training study with the gymnasts ($d = .68$). One obvious reason as to why the effect size should be so different from experiment 1 is that the power of the experiment makes the effect size estimation unreliable. In the effect size estimation for the present study there were only ten participants compared to twenty two in the gymnastic study. My previous experience had shown that it was better to recruit small numbers of committed participants than larger numbers who perhaps could not spare the time or effort to take part in the experiment. However, small numbers such as the ones in this experiment, means that a few absenteeisms (due to very 'real world' demands) have a dramatic effect on the percentage of attendance. Another crucial difference between the two experiments was the timing of when the imagery training took place and

when the PK game was played. In the gymnastic training study for the early PK sessions none of the gymnasts were told to use any particular strategy. Only after the control group was also asked to change their imagery training regime, were all participants asked to use an imagery strategy. In contrast the change to imagery training for the control group in experiment 2 had already occurred by the time the shooters started playing the PK game. Thus I asked all the shooters to use an imagery strategy for all the games they played. The situation is more analogous to the second half of the vault PK game (see graph 1) when both imagery and the control groups were using imagery. The results in this second half of the vault study showed only a very small difference between the imagery and control group. It looks as if experiment 2 replicated the situation of the last part of the vault PK study. This lends further support to the assertion that I made in the discussion of the gymnastic training study, that the imagery training did not really increase the PK ability of the athletes by a significant amount. Instead it was the use of an imagery strategy itself that seemed to contribute the largest PK effect to these sets of studies.

The correlations between imagery and PK did not replicate those of the gymnastic study but were in the predicted direction for the imagery scores and PK correlations at the end of the imagery training. Particularly noteworthy is the large correlations of the PK score with the change in imagery ability over time, which replicates a earlier finding by Braud (1983).

It was unfortunate that so few diaries were returned so that no analyses could be conducted similar to the vaulting study finding.

General Discussion

Ecological validity and statistical power

Both experiments attempted to make a PK-RNG study as psychologically meaningful as possible (ie high in ecological validity). Both studies also used a structured progressive imagery training programme that was tailored specifically for the athletes. Initial exercises were simple ones and these skills were then incorporated into more complex skills which in turn contributed to the next exercise. Although no formal measurements were taken, no participant voiced an opinion that either the PK-RNG task was meaningless, or that the imagery exercises were of no use. If anything the reverse is true; many participants were complimentary on both counts. One outcome of the experiments I would like to suggest is that these solutions to maintaining ecological validity, if not entirely correct, are at least a move in the right direction. There are a number of explanations for the results. The experimental design was not strong enough to preclude many of these differing conclusions. The experimental power itself is so weak such that the results may simply reflect chance scoring. One might legitimately ask what was the point of conducting such studies if the experimental power was so weak. The answer is that the experiments were never conceived to be high powered studies. My personal experience had shown that the training procedure is most effective with smaller numbers of committed athletes rather than larger numbers of not so committed athletes. The studies were also the second prong of research that looked at increases in athletic performance with the same athletes. Because of this latter research the studies were conducted with 'real' athletes and the whole experimental set up occurred on site at or very near the place of training for the athletes. Sessions occurred over a number of weeks during which, for a variety of extraneous reasons, participant attendance fluctuated. However, the gain for this weak powered experimental set up was at least in theory much higher ecological validity with committed athletes and not just volunteer experimental participants. The PK task was constructed as much as possible to be meaningful to the athletes and furthermore to link to some extent with the athletic component of research that the participants

were involved in. Whilst it might be prudent to dismiss these results as mere spurious chance effects, an opposing view is that the results are actually telling a story albeit a quiet one because of the low statistical power. There may be trends that could show us where to look in future larger scale research. With this spirit of enquiry in mind several explanations are proposed as to what the results may be indicating.

The experimenter effect

Whilst the experimental design was specifically aimed at equalising the expectations of success of both the experimental and the control groups, the role of the experimenter's own expectation may play a part in the results of the experiments. The experimenter was the principal researcher and thus not blind either to the experimental hypotheses nor to the identity of each participant's group. It is possible that these factors could have influenced the results. This explanation may, however, be tempered by the following observations. The experimenter was not consciously aware of each of the participants' testing condition. There was no 'label' that identified each participant each week. None of the measurements taken (MIQ and PK scores) was scored until the end of the data collection. Furthermore I as the experimenter, was far more concerned with the logistical operation of the experiment because the experimental situation was unusual in being 'on location' at the place of the athletes' normal athletic activity. Thus there were far more immediate concerns in just getting the gymnasts to the computer set up in the corner of the room, or directing the shooters to the room above them. With the gymnasts there was also considerably more concern about maintaining their safety (keeping electrical wires out of reach and making sure that they were not taken out of their training routine for too long so that they didn't get too cold) to have time to think who from which group was now using the computer. Also the computer games were constructed so that after they were initially set up the instructions and course of the programs were self-contained and fully operated by the athletes. Thus for most of the time the experimenter was not at or near the computer, and therefore was not very conscious of who was using the computer. Anecdotally I can report that I was only really conscious of the group composition during the analysis phase of the research, after all the data had been collected. However, it is clear that in a better designed experiment the experimenter should be blind to the experimental condition.

If one were also to presume that there really were PK or even psi effects going on then there is the possibility of experimenter psi occurring. This is particularly relevant in the light of the recent information supplied by Apple that their pseudo RNG is only seeded once during the boot up time. I booted up the system almost every time. There were a number of occasions when there was a power loss and the system rebooted itself when the power returned. The possibility exists that either I was using my own PK during system boot up, or that I was using ESP to 'tune in' to the most opportunistic time on start up. It is difficult to see how this would be effective unless we were to posit a 'super-psi' explanation (Braude, 1991) because the order of testing for the athletes varied from session to session. Instead a more opportunistic policy was followed. The athletes were still doing their normal training with occasional gaps in the training that were exploited for the experiment's purposes. The athletic training varied from week to week such that people available to run the game in any particular order changed every week. In other words the experimenter would have to not only have to choose the ideal time to start up the computer, but also he would have to predict the sequence of participants' testing. Finally one might note that the experiments were testing a training hypothesis and the results do not seem to favour a strong training effect. However, again it is clear that in a better designed experiment a more adequate RNG is required, either such that it is continually being re-seeded, or that a real RNG is used.

Imagery and PK

Although the experimental design cannot do an adequate job of discriminating against any of these explanations, the following explanations are given as the ones that make the most sense other than thinking that the results reflect spurious chance scoring. Both studies showed that the group that received more imagery training had higher overall PK scores than the group that received less imagery training. The average effect size (*d*) weighted by degrees of freedom was .49. This result lends conceptual support to the observation that imagery is an effective strategy to elicit micro- PK effects.

Correlations between the change in imagery ability and either the change in PK scores or the mean PK scores, were positive and therefore in the predicted direction.

The results generally support the notion that increasing a participant's use of imagery affects their overall PK game score. However, it was not expected that the biggest predictor of PK score would be the change in kinaesthetic ability and not visual ability. In previous experiments with the same participants, it was shown that visual imagery was easier to generate than kinaesthetic imagery (Taylor, 1993a). It is possible the overall level of kinaesthetic imagery did not reach some operational threshold to be effective in eliciting PK effects, until it had been trained above that threshold. Increasing visual imagery ability may not be so dramatic over the length of training period in these experiments because most people's visual imagery may be high and we may be seeing a ceiling effect. This ceiling effect explanation is backed up in part by the small difference in PK scores between the two groups in both experiments, when all participants were specifically asked to use imagery as a strategy.

Conclusions

Whilst parapsychologists acknowledge that there appears to be an important link between imagery and psi, there has been little systematic published work in this area since George & Krippner's (1984) review article. The two experiments reported here tried to replicate the finding that imagery training can improve a participant's PK scores (Braud, 1983). It is recognised that the power of the experiments is low but this was the sacrifice of working with committed athletes who were interested in doing a fairly lengthy imagery training course. Because of the low power of the experiments, it was realised that achieving statistical significance would be unlikely, nor was there any attempt to correct for multiple analyses. Instead the results are offered in the spirit of trends that give further strength to the already existing literature. Whilst the experiments broadly replicated the hypothesis that imagery training improves PK performance, the analysis is not straightforward to interpret. Specifically, change in self-reported imagery ability appears to predict overall high PK performance. However, there is only a small correlation between a change in imagery ability and a change in PK ability, showing a weak training effect. The amount of homework exercise done by the gymnasts correlated positively with overall PK scores, thus replicating both George (1982) and Braud's (1983) findings. However, it was found that this correlation was almost identical regardless of the type of homework exercise done (i.e., even if the exercise included a placebo one that did not use imagery). The correlation was considerably less if the change in PK scores was correlated with the imagery specific homework exercises compared to those including the placebo ones. It may be that the results of both these experiments are reflecting a threshold, ceiling effect or a 'law of diminishing returns' that exists for the effect of training imagery on psychic performance. Another possible explanation is that it is not specifically the imagery training that is giving the PK improvement but some other factor to do with giving imagery training, such as motivation to succeed in improving one's PK scores. Despite the poor evidence that training imagery improves psi scores, this pair of experiments has not ruled out the potential

important role of imagery in psi performance. It may be that to receive any substantial gains in imagery ability, one needs much more than six weeks of training.

Replication efforts might consider the following points: the micro-PK task was contextualised and displayed in a meaningful way to the experimental participants. Also the mental training had a benefit to the participants other than doing micro-PK experiments; this may have provided greater motivation to do the imagery training. A constantly seeded pseudo-RNG or even better a real time RNG would be preferable in the computer games.

If imagery training effects were replicated then the next stage in a systematic investigation would be to tease out what part of an imagery training programme is really responsible for any micro-PK improvement. For example, is it imagery per se or some other factor as the present experiments may suggest, such as a willingness to improve, or a combination of the two.

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FIJI

Training van fantasie voor hogere psi-prestaties: Twee experimenten met atleten

Samenvatting: In het verleden hebben parapsychologen veel aandacht besteed aan het verband tussen fantasie en psi, wat blijkt uit een groot aantal gepubliceerde experimenten over dit aspect van psi. De resultaten zijn bemoedigend, maar verre van eenduidig (George & Krippner, 1984). Het blijft onzeker of training van de fantasie psi bevordert, dan wel geen enkel effect heeft. Dit artikel bevat een rapport over twee experimenten waarin atleten werden getraind in het gebruik van hun fantasie, om na te gaan of zij met hun volgens de hypothese verhoogde voorstellingsvermogen hun PK-scores konden verbeteren. In beide onderzoeken behaalden proefpersonen die meer waren getraind consistent een hogere PK-score dan collega's die minder training hadden gekregen. Er was een positieve correlatie tussen de eigen beoordeling van het voorstellingsvermogen en de PK-resultaten over de betreffende periode. De onderzoekers vonden een zwakke correlatie tussen variaties in dat vermogen tijdens de onderzoeksperiode en in de PK-scores over die periode. Extra analyses wezen echter op een complexer beeld van het verband tussen fantasie en PK. Alternatieve verklaringen zijn: het effect van onze fantasie op PK is aan een maximum gebonden; de motivatie of wil tot goed presteren in een PK-taak kan een belangrijke bijdrage tot hoge PK-scores leveren.

Schulung des Vorstellungsvermögens zur Verbesserung paranormaler Leistungen: Zwei Experimente mit Sportlern

Zusammenfassung: Parapsychologen haben in der Vergangenheit die Verbindung zwischen Vorstellungsvermögen (Imagery) und Psi betont. Zu diesem Aspekt von Psi liegt experimentelle Literatur in beträchtlichem Umfang vor. Die Ergebnisse sind vielversprechend, aber nicht eindeutig (George & Krippner, 1984). Unklar ist, ob die Schulung von Vorstellungsvermögen die Psi-Fähigkeit verbessert oder ob es ohne Auswirkung bleibt. Der vorliegende Beitrag stellt zwei Experimente vor, in denen Vorstellungsvermögen von Sportlern trainiert wurden, um festzustellen, ob diese ihre erwartbar gesteigerten Vorstellungsvermögen dazu nutzen könnten, ihre PK-Leistungen zu verbessern. Beide Experimente zeigten gleichermaßen, daß Teilnehmer mit intensiverer vorgängiger Schulung ihrer Vorstellungsvermögen bessere PK-Ergebnisse erzielten als die in dieser Hinsicht weniger Geübten. Positive Korrelationen ergaben sich außerdem zwischen Selbsteinschätzungen der Vorstellungsvermögen und PK-Ergebnissen in gleichen Zeiträumen. Zudem wurde eine schwache Korrelation zwischen Veränderungen der Vorstellungsvermögen über die gesamte Experimentalphase und der Änderung der PK-Ergebnisse im gleichen Zeitraum festgestellt. Einige weitere Analysen vermitteln indessen ein komplizierteres Bild der Beziehungen zwischen Vorstellungsvermögen und PK. Folgende Alternativerklärungen werden diskutiert: Vorstellungsvermögen können PK-Leistungen Beschränkungen auferlegen; die Motivation oder Bereitschaft, sich bei PK-Aufgaben gut zu schlagen, könnte wesentlich zu den PK-Ergebnissen beitragen.

Entraîner les Aptitudes d'Imagerie afin d'Améliorer le Fonctionnement Psychique: Deux Expériences avec des Athlètes

Résumé : Les parapsychologues ont dans le passé souligné le lien entre imagerie et psi. Il y a eu une quantité considérable de littérature experimentale sur cette facette du psi et les résultats sont prometteurs quoiqu'équivoques (George & Krippner, 1984). Il n'est pas clair qu'entraîner l'imagerie améliore l'aptitude psi ou non. Cet article rapporte deux expériences où on a entraîné des athlètes à l'imagerie afin de voir s'ils pouvaient utiliser leurs aptitutes d'imagerie supposément augmentées afin d'améliorer leur performance PK. Des résultats cohérents sur les deux expériences ont montré que les participants à qui l'on avait donné plus d'entraînement à l'imagerie ont eu des scores PK plus élevés que ceux moins entraînés. Des corrélations positives ont aussi été trouvées entre les scores auto-évalués d'imagerie et les scores PK sur la même période. Il y a aussi eu une faible cor-

rélation entre un changement d'imagerie sur la période expérimentale et un changement dans les scores PK sur la même période. Des analyses additionnelles ont toutefois dressé un tableau plus complexe de la relation entre imagerie et PK. Des explications alternatives sont discutées: il existe un effet plafond de l'imagerie sur la performance PK; la motivation ou volonté de bien faire dans les tâches PK peut fortement contribuer aux scores PK.

Treinando as Habilidades de Formacao de Imagen Mentais em prol do Aprimoramento do Funcionamento Parapsicologico: Dois Experimentos com Atletas

Resumo: Os parapsicólogos enfatizaram, no passado, a ligação entre as imagens mentais e psi. Há uma quantidade considerável de literatura experimental sobre este faccta de psi e os resultados são promissores porém duvidosos (George & Krippner, 1984). Não está claro se o treinamento da formação de imagens mentais melhora a atividade psi ou não produz qualquer efeito. Este trabalho relata dois experimentos em que houve o treinamento da formação de imagens mentais em atletas para ver se eles poderiam utilizar essa habilidade hipoteticamente aumentada para melhorar sua performance PK. Os resultados, consistentes nos dois experimentos, mostraram que os participantes que receberam mais treinamento na formação de imagens mentais demonstraram escores PK mais elevados do que aqueles que tinham sido menos treinados. Correlaçãoes positivas também foram encontradas entre os escores de formação de imagem auto-estimada e os escores PK durante o mesmo periódo de tempo. Há, no entanto, algumas análises adicionais que dão um panorama mais complexo da relação entre as imagens mentais e PK. As explicaçãoes alternativas discutidas são: existe um limite de influência das imagens mentais sobre a performance PK; a motivação ou a disposição para un bom desempenho em tarefas PK podem influenciar significativamente sobre os escores PK.

Entrenamiento de Imagenes Mentales para Aumentar el Funcionamiento Psíquico: Dos Experimentos con Atletas

Resúmen: En el pasado los parapsicólogos han enfatizado la relación entre la imaginería mental y psi. Hay una cantidad considerable de literatura experimental sobre este aspecto de psi y los resultados son prometedores pero inciertos (George & Krippner, 1984). No esta claro si el entrenamiento de imágenes mentales aumenta la habilidad psi o non tiene efecto alguno. Este trabajo presenta do experimentos en los cuales se entranaron las imágenes mentales de atletas para determinar si ellos podían usar us supuesta habilidad imaginal aumentada para mejorar sus habilidades de PK. Se obtuvieron resultados consistentes en ambos experimentos pues los participantes que recibieron más entrenamiento de imaginería mostraron puntuaciones de PK mayores que los que recibieron menos entrenamiento. Se encontraron correlaciones positivas entre las auto-evaluaciones de imaginería de los sujetos y las puntuaciones de PK para los mismos datos. También se encontró una correlación débil entre un cambio en imaginería a través del período experimental y un cambio en puntuaciones de PK para el mismo período. Otros análisis adicionales ofrecen una perspectiva más compleja de la relación entre la imaginería mental y la PK. Las explicationes alternas que se discuten son: hay un efecto de limitación ("ceiling effect") de la imaginería sobre la PK; la motivación o el deseo de salir bien en pruebas de PK podría ser ser una variable importante que afecta a la PK.

L'addestramento delle abilità di *imagery* per incrementare l'attività paranormale: due esperimenti con atleti

Sommario: In passato i parapsicologi hanno puntato molto sul legame tra *imagery* e psi: molti lavori sperimentali sono stati dedicati a questo aspetto della psi e i risultati sono stati promettenti, per

quanto un po' equivoci (George e Krippner, 1984). Non è chiaro se l'addestramento all'*imagery* migliori l'abilità psi o non abbia alcun effetto. Questo lavoro riferisce i dati di due esperimenti di addestramento all'*imagery* in atleti, che miravano a verificare se questi soggetti sarebbero stati in grado di impiegare tale ipotetica abilità di *imagery* accresciuta per migliorare le loro prestazioni PK. Nei due esperimenti si è registrato il medesimo risultato, per il quale i partecipanti che avevano ricevuto il maggior addestramento all'*imagery* mostravano punteggi di PK superiori di quelli dei soggetti che avevano ricevuto un addestramento inferiore. Sono state inoltre rinvenute correlazioni positive tra i punteggi di *imagery* auto-attribuiti e i punteggi PK ottenuti nello stesso periodo. E' emersa anche una lieve correlazione tra un cambiamento nell'*imagery* nel periodo sperimentale e un cambiamento nei punteggi PK nello stesso periodo di tempo. Altre analisi, comunque, forniscono un quadro più complesso del rapporto tra *imagery* e PK. Vengono discusse alcune spiegazioni alternative: l'esistenza di un effetto-limite dell'*imagery* sulle prestazioni PK; la possibilità che la motivazione o la volontà di riuscire nei test PK siano componenti importanti nei punteggi PK.

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Geomagnetism and the Edinburgh Automated Ganzfeld

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Abstract: This paper reports on analyses examining whether variations in geomagnetic activity and ESP performance within an automated ganzfeld system are related. These analyses used the results from a 97 trial ganzfeld-psi experiment with a creative population, designed to examine the role of the sender, and conducted by the Koestler Chair of Parapsychology at the University of Edinburgh using their automated free-response testing system. Results of this study were 32 hits in 97 trials, for a hit rate of 33% (exact binomial p = .047). All analyses in this report are one-tailed unless otherwise specified.

Geomagnetic parameters using the ap, F, Y, local 'ap', and local Y-ap values were correlated with participants' ganzfeld target rankings. The relationship between the ap indices and rank was significant at Spearman's *rho* = .212, $p <$ .05. The correlation for local ap and rank was non-significant, but strongly in the direction opposite to that predicted, *rho* = -.289. Correlations for rank and F values were non-significant at *rho* = -.063, and correlations for Y and local Y-ap values with rank were suggestive but non-significant at *rho* = .141 and -.146. Ranks were divided into two groups of being either a Hit (rank of 1), or No Hit (rank of 2, 3, or 4), and comparison using a Kolmogorov-Smirnov two-sample test of the two groups with the ap, F, Y, local 'ap' and local Y-ap indices yielded a significant difference only for the ap indices of the Hit and No Hit groups at p = .04. Results for the F value were p = .09 (two-tailed), and the Y, local 'ap' and local Y-ap were non-significant at p = .34, .10, and .33, respectively. Relevant characteristics of GMF activity and of the geomagnetic indices are discussed.

Introduction

Geomagnetism and psi

The Earth is surrounded by a magnetic field similar to that surrounding a common bar magnet. The intensity of this geomagnetic field (GMF) is constantly changing as the Earth is subjected to solar particles and other extraterrestrial influences. Such influences show up in geomagnetic measurements as either periodic (e.g. the day-night cycle due to solar heating) or transient (e.g. cosmic ray events) fluctuations. These fluctuations are recorded and transformed into several types of geomagnetic measures. It appears from past psi research that *change* in GMF has more often been correlated with psi than GMF *intensity*. GMF change has most typically been measured using the ap and the aa indices. The ap index is a measure of the maximum fluctuation within a *three-hourly* period, while the aa index is a *daily* measure of the mean change in the global GMF. Apart from using these typical indices, however, we felt it was important to collect data using additional measures of GMF intensity. Therefore we also used F, a measure of the absolute local field intensity, and Y, a measure of the East-West component. The ap, F and Y values are typically expressed in nanoTesla.

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Research into the relationship between the GMF and ESP over the last decade has produced an increasingly large body of evidence that suggests a relationship between psi performance and fluctuations in the GMF field (Arango & Persinger, 1988; Berger & Persinger, 1991; Haraldsson & Gissurarson, 1987; Lewicki, Schaut & Persinger, 1987; Persinger & Schaut, 1988; Persinger, 1985, 1987; Radin, McAlpine and Cunningham, 1993; Schaut & Persinger, 1985; Spottiswoode, 1993; Williams, Roe, Upchurch & Lawrence, 1994). This relationship has associated periods of relative quiescence in the GMF with enhanced psi perception. As Persinger (1989) provides a sizeable review of this evidence, it will not be covered here, and interested parties are also referred to Wilkinson and Gauld (1993) for further discussion on the same topic.

Persinger and Krippner (1989) reported that higher scoring for dream ESP experiments tended to occur on days of low GMF activity, relative to the surrounding days, as did Tart (1988) in his study of geomagnetic effects on GESP. Similar findings were reported by Makarec and Persinger (1987), for card guessing scores. Spottiswoode (1990), in his analysis of six free-response studies, found a significant negative correlation between trial scores and the GMF values of the three-hour periods in which the trials occurred. The Spottiswoode study also pointed out that this observed geomagnetic effect was absent from studies with no apparent overall ESP result.

Although the literature is consistent in suggesting a relationship between the GMF and psi performance, few studies have used a creative population. A previous evaluation by Radin *et al.* (1993), of a ganzfeld study at Edinburgh that used both a creative population as well as a normal one, demonstrated a non-significant negative correlation between psi success and GMF for the normal population, but a non-significant positive correlation for the creative population. In effect, the creative population was evidencing a higher hit rate during periods of high geomagnetic activity, which is a reversal of the normally found trend. Given that the correlations were non-significant, it may be that this particular trend was a chance occurrence.

GMF indices

This report examines the possible relationship of the GMF with the outcome of a recent ganzfeld-psi study at the University of Edinburgh that used a creative population of artists and musicians for participants. In spite of the prior non-significant finding by Radin *et al.* (1993), for a creative population, the amount of previous research indicating a positive correlation between a quiet GMF and psi success seemed to warrant the hypothesis that this creative population would produce psi hitting in the ganzfeld on days of low activity, as measured by the ap indices. In addition, a report by Williams *et al.* (1994), from a ganzfeld study utilising multiple senders, also looked, post hoc, at the absolute intensity of the GMF using local F values in addition to their planned analyses of global values. They found a small positive correlation (Spearman *rho* = .16) between low GMF intensity as measured by the local values and good ESP performance. Additionally, Spottiswoode (1993) was able to examine local values in relation to the reported global values for his site and found that the global index provided a reasonable measure of local short term field changes. It was expected, then, that the local indices would reflect a pattern similar to the global indices. Thus, in the present study, analyses using GMF parameters derived from a local survey station approximately forty miles away were included in addition to the typically used global indicators.

It would seem that the determination of the mechanism, or mechanisms, by which ESP occurs would greatly facilitate the understanding of psi, and provide a solid base from which to explore psi. In addition, an understanding of the mechanisms of ESP would enhance the possibility of eliciting more controlled psi. The first step in this

determination would be the identification of some measurable variable that is systematically associated with the occurrence of ESP. The relationship between the GMF and ESP success could play a vital role in this search for the first physical correlate of psi.

One of the problems with past studies looking at the psi-GMF topic is that there is no clear idea as to what mechanism(s) could account for this relationship. Broadly speaking, we feel the possibilities are: (1) that the ambient magnetic field somehow interacts with, or composes, the physical mechanism underlying psi; (2) that some third factor modulates both the GMF and psi; or, (3) that the ambient magnetic field has some direct effect on human physiology that directly or indirectly affects psi functioning. Because Persinger (1979), among others, has considered the first two possibilities in detail, this study explored the third option.

Although past research has suggested that magnetic fields could affect human physiology, Hubbard and May (1987) have argued that magnetic fields as weak as the GMF could have no effect, and would most likely be swamped out by the stronger local fields caused by electrical appliances and such. However, more recent and better quality research than that which Hubbard and May were able to review indicates that this is indeed a viable proposition. It has been demonstrated that with fields *weaker than* the GMF, the brain exhibits electrical activity at the frequency of the ambient field, but *only* if the frequencies correspond to those occurring naturally in the brain (Bell, Marino & Chesson, 1994). However, these induced effects are transient (e.g., see the review by Ross-Adey & Bawin, 1977).

With these findings in mind, it was assumed that if the psi-GMF relationship was due to a direct interaction with human physiology, it would be beneficial to look at the state of the GMF at the actual time of the ganzfeld session. Thus, it was expected that low local field values would show a significant correlation with psi hitting. For this analysis, the ap index was used to give three-hourly measures of the global field change and F values were used to give a measure of the intensity of the local field. F values were also used to calculate local 'ap' values (after Spottiswoode, 1993) to provide a measure of the change in the local GMF. It was hoped that this would give a clearer picture of what aspects of the GMF were linked to psi performance: the *global* state of the field as compared to the *local* conditions; and the relative *change* in the field as compared to the absolute *intensity* of the field.

A further speculative analysis was based on a study by Ganguly (1986). Ganguly found that artificially generated ultra-low frequency (ULF) electromagnetic waves (that include the vital frequencies found to interact with the human brain; Bell *et al.*, 1994) could be found only in the East-West component of the GMF, possibly due to unique physical conditions found in certain ionospheric regions. Because these waves were known to interact with the human brain, and might conceivably affect the acquisition of psi information in some way, it was decided to look for a relationship between psi-hitting and this East-West GMF component (termed Y). In this case, it would be expected that the higher the intensity of the Y component, the greater the magnitude of the physiological driving response. Because the dominant frequencies of the ULF waves centre around 7 Hz, corresponding to the alpha brain state thought to be psi conducive (Morris, Roll, Klein & Wheeler, 1972; Stanford & Palmer, 1975), it was decided to predict a positive correlation between global Y intensity and psi hitting. Additionally, values for local Y intensity, termed 'local Y-ap' were calculated, and a positive correlation with psi hitting predicted.

Thus, the primary hypothesis for this analysis was:

1. a negative correlation between global ap and psi hitting in the ganzfeld.

The secondary hypotheses were:

2. a negative correlation between local ap and psi hitting;

3. a positive correlation between Y values and psi hitting;

4. a positive correlation between local Y-ap values and psi hitting; and

5. no direction predicted for the correlation between F values and psi success.

In order to examine whether there might exist differences between those who obtained direct hits (rank of 1 to actual target), and those who did not (rank of 2, 3, or 4 to target), the receiver's rank scores were broken into two groups and the same predictions applied to each of the GMF values specified (global ap, F, Y, local 'ap' and local Y-ap).

Method

The ganzfeld study in this analysis was conducted in the automated ganzfeld facility at the Koestler Chair of Parapsychology at the University of Edinburgh. The study was designed to explore the role of the sender in the ganzfeld and was carried out by Robert Morris, Kathy Dalton, Deborah Delanoy, and Caroline Watt. The study population consisted of artistically or musically creative participants, because this population has evidenced a track record of success in the ganzfeld in past studies (Morris, Cunningham, McAlpine & Taylor, 1993; Schlitz & Honorton, 1992).

For complete details on the Sender / No Sender ganzfeld study used in this analyses, see Morris *et al.* (1995). For additional information on the security measures involved, as well as additional information on laboratory layout, see Dalton, Morris, Delanoy, Radin, Taylor & Wiseman (1994). The final outcome from each experimental session was the receiver's ranking of four possible video clips, one of which was the actual target, the other three video clips being decoys. The present analyses use the rank assigned to the actual target (i.e., 1 - 4) as the primary data point per session, thus making the data comparable to results from similar studies (e.g., Radin *et al.* 1993).

Analyses

This report focuses primarily on the relationship between geomagnetic parameters and the outcome of the ganzfeld sessions. Other detailed information on the study, such as correlations with personality factors, creativity, imagery, etc., are reported in Morris et al (1995).

Geomagnetic indices were retrieved for each day on which a ganzfeld session was conducted, from February 9 to June 17, 1994, after all sessions had been completed. The geomagnetic analysis was conducted specifically after all data was collected to avoid the possibility that knowledge of geomagnetic parameters during the experiment might bias experimenters' expectations of individual sessions, thus no experimenter was aware of the state of the GMF on any day on which a trial was held.

Because the global ap indices are derived from quantized variables, their distribution is irregular and therefore a nonparametric correlation (Spearman) was used to avoid assumption of normal distribution of GMF values. Spearman's *rho* was also used to correlate target rank with the total intensity of the local GMF (F), and with the East-West component of the total field intensity (Y). Local 'ap' values were calculated from F values (after Spottiswoode, 1993) to provide a measure of the change in flux locally, and this was also correlated with receiver's rank score. Additionally, receiver's rank scores were broken down into two groups of 'Hits' or 'No Hits' where a rank of 1 equalled 'Hit' and ranks of 2, 3, and 4 equalled 'No Hit'. To compensate for the presence of outliers in the data, a Kolmogorov-Smirnov two sample test was used to measure the difference between the two groups in relation to each of the GMF values specified (global ap, F, Y, local 'ap' and local Y-ap). This is an omnibus test for the equality of two

distributions, being a non-parametric equivalent of the *t*-test, that is typically used for distributions with unequal numbers. All analyses in this report are one-tailed unless otherwise specified.

Results

Ganzfeld Hit Rate

The study resulted in an overall hit rate of 32 hits out of 97 trials, which is just statistically significant (exact binomial p = .047), providing further evidence for ESP results with the automated ganzfeld procedure. Results were non-significantly above chance for all three conditions. For more details on these results, please see Morris et al (1995).

Geomagnetism

It should be noted that, when several hypotheses are tested, be they preplanned or not, it can be expected that about 1 in 20 will be significant by chance alone using the .05 level.

The predicted relationship (i.e., psi success and low global geomagnetic activity) between the participants' ganzfeld target rankings (ESP rank) and the global ap indices was significant at *rho* = .212, $p < .05$, as is shown in Table 1.

Table 1
Spearman correlation matrix for geomagnetic values and assigned ESP rank (N=96)

	ESP Rank
ap	.212*
F	-.063
Y	.141
local 'ap'	-.289
local Y-ap	-.146

In the above table, N = 96 due to missing values in the geomagnetic data.
* significant at $p < .05$

Table 2
Results of Kolmogorov - Smirnov two sample test comparing geomagnetic values for Hit and No Hit groups

Geomagnetic Measure	**Maximum Difference**	***p*** **(one-tailed)**
ap by Hit	.267	.041
F by Hit	.261	.096*
Y by Hit	.149	.345
local 'ap'	.203	.104
local Y-ap	.152	.332

* two-tailed value

Table 3
Descriptive statistics comparing GMF values for hitting and non-hitting groups

	Hitting			Non-Hitting		
Geomagnetic Measure	**Mean**	**SD**	**N**	**Mean**	**SD**	**N**
ap	18.8	16.8	32	27.2	25.4	65
F	49187.6	103.4	32	49158.4	21.2	65
Y	1865.9	44.3	32	1870.5	40.5	65
local 'ap'	16.7	10.2	31*	16.4	11.3	64*
local Y-ap	18.5	11.8	31*	17.3	11.4	63*

* Missing value(s) due to unavailability of F value from survey station for full three hour period.

The correlation between rank and local 'ap' was non-significant, but strongly in the direction opposite to that predicted, *rho* = -.289. Had this direction been predicted, it would have been significant at the $p < .01$ level, and may indicate that a high level of local GMF activity was correlated with psi hitting. It should be noted here that unlike Spottiswoode (1993), we did not find the expected correlation of local ap with the global ap values, *rho* = .049. The correlation between ESP rank and F was non-significant (*rho* = -.063), as was the correlation between ESP rank and Y (*rho* = .141), and ESP rank and the local Y-ap (*rho* = -.146).

Ranks were then divided into two groups of either a Hit (rank of 1), or No Hit (rank of 2, 3, or 4). Comparison using the Kolmogorov-Smirnov two sample test (see Table 2) for the two groups with the ap, F, Y, local 'ap' and local Y-ap indices yielded a significant difference for the ap indices at $p = .04$, indicating that the distribution of the ap index was stochastically larger for the Hit group. Results for the F value were non-significant at $p = .09$, two tailed, as no direction had been specified in advance. The Y, local 'ap' and local Y-ap were non-significant at $p = .34$, .10, and .33, respectively. Table 3 gives the values from which the above results were derived, for completeness.

Discussion

The results of the present analysis replicate and extend the conclusions of other analyses in finding a significant relationship between the GMF and ESP success on days of low global geomagnetic activity ($p = .05$). Although previous work by Radin *et al.* (1993) had found a non-significant negative correlation between the GMF and the scores of a creative population in the ganzfeld at the University of Edinburgh, our study replicated the type of GMF relationship typically found with ESP success, that of a significant positive correlation. These results are similar to those of Persinger & Krippner (1989), who found a significant result of $p = .04$ for the aa values during the 24-hour period in which the strongest telepathy for dream ESP experiments occurred. In order to better understand our results, let us look at each of them and their implications in turn.

Intensity

Because neither F nor Y showed any significant correlation with psi rankings, it would appear that the absolute intensity of the GMF is not an important variable in determining successful psi functioning. However, Y does show a small correlation in the predicted direction (*rho* = .141). Al-

though no direction was predicted for the F value, a significant *one*-tailed F value (p = .04) for our Hit group is interesting to note, and may indicate that psi works best on days having some particular combination of intensity and flux.

Change

Because the ESP ranking showed a significant positive correlation with the global ap but a negative correlation with the local 'ap', it seems that the relationship between psi and the GMF is less straightforward than we supposed. Possibly the consistently found global correlation reflects the presence of a common factor between the GMF and psi, whereas the local correlation found here indicates a more direct interaction. In addition, because we also did not find a correlation between local and global values, this questions the assumption that the ap indices are always a good indicator of local values.

Y values

The lack of any significant correlation between the Y values and psi ranking could be due to one of four reasons: 1) the vital frequencies do not naturally occur more in the East-West direction than in the North-South or vertical directions and this finding was an artefact of Ganguly's (1986) experiment; 2) there is a further modulating factor that we have overlooked (e.g., driven brain state *plus* other environmental or psychological variable); 3) that absolute intensity is less important than the rate of change; or, 4) that there is no relationship at all.

In addition, the three-hourly values used in this study showed a comparable correlation to past studies using mean daily values. Although the significance of this pattern is not clear, it would seem to indicate that the continued examination of the state of the GMF near to the time of the actual psi session may be justified for future research.

It was also interesting to note that our local flux values showed a correlation in the same direction as that found by Radin *et al.* (1993), also for a creative population, whereas our global ones did not. A re-examination of Radin's data comparing actual ap and local 'ap' values to the estimated values (Planetary A-Index, or PAI values) he used could possibly help clarify these findings and help determine whether individual differences do indeed have such a strong effect on psi functioning.

An unexpected result of the present analysis was the significant value for the local 'ap' in a direction opposite to that predicted (*rho* = -.289). Had this direction been predicted, it would have been significant at the $p < .01$ level, which may indicate that a high level of local GMF activity was correlated with psi hitting. Future researchers should bear this in mind when making further predictions about the relationship between psi success and the local 'ap'. It had been felt that the local flux values (local 'ap' and local Y-ap) would be a more sensitive measurement than the global ap, particularly in view of the fact that the recording agency — a monitoring station at Eskdalemuir — is approximately 40 miles from the University. This gives rise to several considerations. Because the global indices are correlated with several other factors it may be that one of these is the mitigating factor for psi facilitation, which could explain the discrepancy. Fluctuations in geomagnetic activity correlate to a greater or lesser extent with fluctuations in solar, climatic and tectonic factors, all of which may in turn have some effect upon physiological functioning. Previous research suggests that there exists a variety of physical effects thought to be correlated with GMF indices, such as convulsive seizure frequency (Rajaram & Mitra, 1981), psychiatric admission rates (Raps, Stoupel & Shimshoni, 1992), and plasma melatonin levels (Randall, 1990). All of these involve factors that could possibly produce the observed correlations between the GMF and the ESP results reported here. This could indicate the presence of a psi factor that is related to the presence and duration of geomagnetic activity within an optimal range, or possibly

suggests yet another factor that requires an optimal rate of change in geomagnetic activity within a specific time interval to facilitate psi.

Given that environmental conditions provide a potentially rich source of signals to the human organism (Campbell, 1967), then it is to be expected that psi experiences, both in and out of the laboratory, should (like other behaviours) be influenced by complex, subtle stimuli within the environment. Analyses conducted by Persinger (1987), Persinger & Schaut (1988), and Wilkinson & Gauld (1993) on spontaneous case materials have indicated that the reported psi experiences of day-to-day life also take place, to a significant degree, in times of low geomagnetic activity. This appears to be especially true in the case of reported telepathic experiences (Persinger, 1987). Possibly then, it is the day-to-day variations in this global phenomenon that would help explain the persistent variability in the display and accuracy of these experiences, both in daily life and in the laboratory. It is clear that the examination of the GMF and its potential to become the first measurable physical correlate of psi is far from complete, and further research is needed to evaluate this potential.

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Geomagnetisme en geautomatiseerd Ganzfeld-systeem in Edinburgh

Samenvatting: Dit artikel behandelt het verband tussen veranderingen in geomagnetische activiteit en de ESP-scores in een geautomatiseerde Ganzfeld-opzet. Daartoe werden de uitkomsten geanalyseerd van een Ganzfeld-experiment van 97 sessies met creatieve proefpersonen, opgezet om

de rol van de 'zender' te meten en uitgevoerd met het geautomatiseerde open-antwoorden Ganzfeld-testsysteem van de Koestler Chair aan de universiteit van Edinburgh. In 97 sessies werden 32 treffers behaald, een score van 33% (exacte binomiale p-waarde 0,047). Voor zover niet anders vermeld zijn alle analyses in dit artikel 1-zijdig.

Geomagnetische parameters als de waarden ap, F, Y, local 'ap' en local Y-ap werden gecorreleerd met de rangordening van de doelen door de proefpersonen in het Ganzfeld-experiment. De vergelijking van de ap-indices met de rangorde resulteerde in een Spearman *rho*-coëfficiënt van 0,212 ($p < 0,05$). De correlatie tussen local ap en de rangorde was niet significant, maar sterk tegengesteld aan de voorspelde richting (*rho* = -0,289). De correlatie tussen rangorde en F-waarden was niet significant (*rho* = -0,063). De correlaties tussen Y, resp. local Y-ap en de rangorde waren niet significant (*rho* resp. 0,141 en -0,146). De gerangordende doelen werden opgedeeld in twee groepen: treffer (rangnummer 1) en misser (rangnummers 2, 3 en 4). Via een Kolmogorov-Smirnov test voor twee steekproeven werden deze groepen gerelateerd aan de meetwaarden ap, F, Y, local 'ap' en local Y-ap. Daarbij bleek alleen de ap significant verschillend ($p = 0,04$). Voor F was de p-waarde 0,09 (2-zijdig), voor Y, local 'ap' en local Y-ap waren de niet significante p-waarden resp. 0,34, 0,10 en 0,33.

Het artikel bespreekt ook relevante kenmerken van GMF-activiteit en de geomagnetische maten.

Geomagnetismus und das Edinburgh Automated Ganzfeld

Zusammenfassung: Dieser Beitrag berichtet von Analysen zur Frage, ob Schwankungen geomagnetischer Aktivität und ASW-Leistung im automatisierten Ganzfeld in Beziehung stehen. Diese Analysen verwendeten die Ergebnisse eines Ganzfeld-Psi-Experiments mit 97 Einzelversuchen mit einer kreativen Versuchsgruppe. Das Experiment, durchgeführt am Koestler-Lehrstuhl der Universität Edinburgh unter Verwendung des dortigen automatisierten Free-Response-Systems, sollte die Rolle des Senders untersuchen. Es ergaben sich 32 Treffer in 97 Einzelversuchen, also eine Trefferrate von 33% (exakt binom. p-Wert: 0.047). Alle in diesem Beitrag erwähnten Analysen sind, sofern nicht anders angegeben, einseitige.

Geomagnetische Parameter mit Werten für ap, F, Y, local 'ap' und local Y-ap wurden mit den Ganzfeld Target Rankings der Teilnehmer korreliert. Die Beziehung zwischen ap-Indizes und Rank (Einstufung) war signifikant bei einem Spearman *rho*- Koeffizienten von 0.212, $p < 0.05$. Die Korrelation für local ap und Rank war nicht signifikant, tendierte aber stark entgegen der vorhergesagten Richtung, *rho* = -0.289. Korrelationen für Rank und F-Werte waren bei *rho* = 0.063 nicht signifikant, und Korrelationen für Y- und local-Y-ap-Werte mit dem Rank gingen in die vorhergesagte Richtung, waren aber insignifikant bei *rho* = 0.141 und -0.146. Die Ranks wurden in zwei Gruppen aufgeteilt: in 'Treffer' (Rank 1) oder 'Kein Treffer' (Rank 2, 3 oder 4). Vergleiche der beiden Gruppen unter Verwendung des Kolmogorov-Smirnov Zwei-Proben-Tests mit den ap-, F-, Y-, local-'ap'- und local-Y- ap-Indizes ergaben einen signifikanten Unterschied nur für die ap-Indizes der Treffer- und Kein-Treffer-Gruppen bei $p = 0.04$. Die Ergebnisse für den F-Wert lagen bei $p = 0.09$ (zweiseitig) und Y, local 'ap' und local Y-ap waren mit jeweils $p = 0.34$, 0.10 und 0.33 nicht signifikant. Relevante Eigenschaften der GMF- Aktivität und der geomagnetischen Indizes werden diskutiert.

Géomagnétisme et le Ganzfeld automatisé d'Edimbourg

Résumé : Cet article rapporte des analyses examinant si les variations de l'activité géomagnétique et la performance ESP dans un système de ganzfeld automatisé sont liées. Ces analyses ont utilisé les résultats d'une expérience psi ganzfeld comprenant 97 essais avec une population créative, mise au point afin d'examiner le rôle de l'émetteur, et conduite par la Chaire Koestler à l'Université d'Edimbourg en utilisant leur système de test automatisé à réponse libre. Les résultats de cette étude furent 32 succès dans 97 essais, pour un niveau de succès de 33% (p binomial exact = .047). Toutes les analyses dans ce rapport sont unilatérales à moins d'une spécification autre.

Les paramètres géomagnétiques utilisant les valeurs ap, F, Y, "ap" local, et Y-ap local furent corrélés aux ordonnancements des cibles par les participants au ganzfeld. La relation entre indices ap et rang fut significative à *rho* de Spearman = .212, $p < .05$. La corrélation entre ap local et rang fut non-significative, mais fortement dans la direction opposée à ce qui était prédit, *rho* = -.289. Les corrélations entre le rang et les valeurs F furent non-significatives à *rho* = -.063, et les corrélations entre les valeurs Y et Y-ap locales avec le rang furent suggestives mais non-significatives à *rho* = .141 et -.146. Les rangs furent divisés en deux groupes étant soit un Succès (rang de 1), ou Non Succès (rang de 2, 3, ou 4), et une comparaison utilisant un test à deux échantillons Kolmogorov-Smirnov des deux groupes avec les indices ap, F, Y, "ap" local et Y-ap local a conduit à une différence significative seulement pour les indices ap des groupes Succès et Non Succès à $p = .04$. Les résultats de la valeur F furent $p = .09$ (bilatéral), et pour les Y, "ap" local et Y-ap local furent non-significatifs à $p = .34, .10$ et .33, respectivement. Les caractéristiques pertinentes de l'activité GMF et des indices géomagnétiques sont discutées.

Geomagnetismo e o Ganzfeld Automatico de Edinburgo

Resumo: Este artigo traz as análises sobre a verificação feita a respeito da possível relação entre as variações na atividade geomagnética e o desempenho da ESP em um sistema ganzfeld automático. Estas análises utilizaram o resultado de um experimento psi ganzfeld de 97 provas com uma população criativa, projetado para examinar o papel do sender e conduzido pela Koestler Chair, na Universidade de Edimburgo, usando seu sistema automático de testes de respostas livres. Os resultados desse estudo foram 32 acertos em 97 tentativas, para uma taxa de acerto de 33% (binômio exato $p = 0{,}047$). Todas as análises nesse relatório são unicaudais, exceto as que estão especificadas.

Os parâmetros geomagnéticos utilizando-se os valores de ap, F, Y, 'ap' local e Y-ap local foram correlacionados com as classificaçãoes dadas pelos participantes aos alvos do ganzfeld. A relação entre os índices ap e a classificação foi significativa com o *rho* de Spearman = 0,212, $p < 0{,}05$. A correlação com o ap local não foi significativa, mas pendeu fortemente para a direção opposta à prevista, *rho* = 0,289. As correlaçãos entre a classificação e os valores F não foram significativas, sendo *rho* = 0,063; as correlaçãoes entre os valores do Y e do Y-ap local e a classificação foram suggestivos mas não significativos, sendo *rho* = 0,141, $p = 0{,}146$. As classificaçãoes foram dividas em dois grupos: um de 'acertos' (classificação em 1° lugar) e outro de não acertos (classificação de 2°, 3° e 4° lugares). A comparação utilizando-se um teste de duas amostras de Kolmogorov-Smirnov de dois grupos com os índices dos grupos de acerto e não acerto sendo $p = 0{,}04$. Os resultados para os valores F foram $p = 0{,}09$ (bicaudal) e Y, 'ap' local e Y-ap local não foram significativos ($p = 0{,}34$; 0,10 e 0,33). Características relevantes da atividade do campo geomagnético e dos índices geomagnético são discutidas.

Geomagnetismo y el Ganzfeld Automático de Edinburgo

Resúmen: Este trabajo reporta análisis que exploran si las variaciones en actividad geomagnética y la percepción extrasensorial en un sistema de ganzfeld automático están relacionadas. Estos análisis usaron los resultados de un experimento psi con 97 pruebas con una población creativa, diseñado para estudiar el rol del agente, y llevado a cabo en la Cátedra Koestler de la Universidad de Edinburgo usando el sistema de prueba de respuesta libre automático. Los resultados de este estudio fueron 32 aciertos en 97 pruebas, para un promedio de aciertos de 33% (probabilidad binomial exacta = .047). Todos los análisis en este trabajo son de una cola a menos que se cualifiquen.

Los parámetros geomagnéticos usando los valores ap, F, Y, "ap" local, y Y-ap local fueron correlacionados con las evaluaciones en rango de los participantes. La relación entre los índices ap y el rango fué significativa con un *rho* de Spearman = .212, $p < .05$. La correlación para el ap local y el rango no fué significativa, pero fué en la dirección opuesta a la predicción, *rho* = -.289. Las correlaciones para el rango y los valores de F no fueron significativas, *rho* = - .063, y las correlaciones para Y y Y-ap local con el rango fueron sugestivas pero no significativas, *rho* = .141 y - .146. Los rangos

se dividieron en dos grupos de aciertos (rango de 1) o no aciertos (rangos de 2, 3, o 4). Comparaciones usando la prueba de dos grupos Kolmorogov-Smirnov con los índices ap, F, Y, 'ap' local y Y-ap fueron significativamente diferentes solo para los índices ap de los grupos de acierto y no-acierto, $p = .04$. Los resultados para el valor F fueron $p = .09$ (two-tailed). La Y, "ap" local y Y-ap local no fueron significativos, $p = .34$; .10; y .33, respectivamente. Se discuten las características relevantes de la actividad GMF y de los índices geomagnéticos.

Geomagnetismo e ganzfeld automatizzato a Edimburgo

Sommario: Questo testo riferisce l'esito di alcune analisi che hanno esaminato se esistono correlazioni tra le variazioni dell'attività geomagnetica e le prestazioni ESP in situazione di ganzfeld. Queste analisi hanno preso in considerazione i risultati di un esperimento sulla psi in ganzfeld composto da 97 prove, condotto con una popolazione di creativi, progettato per esaminare il ruolo del trasmittente e svolto dalla Cattedra Koestler di Edimburgo usando il sistema automatizzato di risposta libera. I risultati di questo studio sono consistiti in un totale di 32 successi su 97 prove, con un tasso quindi di successo del 33% (p binomiale esatto = .047). Tutte le analisi di questo lavoro sono a una coda, a meno che venga specificato altrimenti.

I parametri geomagnetici, misurati sui valori ap, F, Y, ap locale e ap-Y locale, sono stati correlati all'ordinamento dei bersagli dato dai partecipanti all'esperienza ganzfeld. Il rapporto tra gli indici ap e l'ordinamento è risultato significativo al test di Spearman, con rho= .212, p<.05. La correlazione tra ap locale e ordinamento dei bersagli non era significativa, ma mostrava una forte tendenza nella direzione opposta a quella predetta (rho=-.289). Le correlazioni tra i ranghi e i valori F non erano significative (rho=-.063) e quelle tra i ranghi e i valori Y e ap-Y locale erano indicative, ma non significative, con rho=.041 e -.146. Le scelte effettuate dai soggetti sono state divise in due gruppi, a seconda che fossero bersagli centrati (rango 1) o non centrati (ranghi 2, 3 e 4) e i confronti, compiuti con il test a due campioni di Kolmogorov-Smirnov, tra i due gruppi e i valori ap, F, Y, ap locale e ap-Y locale hanno dato una differenza significativa solo per gli indici ap dei gruppi dei successi e degli insuccessi, con p=.04. I risultati per il valore F sono stati di p=.09 (a due code) e per i valori Y, ap locale e ap-Y locale non sono stati significativi, con p=.34; .10 e .033. Vengono discusse le caratteristiche importanti dell'attività geomagnetica e degli indici geomagnetici.

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On Being Lucky: The Psychology and Parapsychology of Luck

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Abstract: Many individuals believe that luck plays an important role in their lives and that it is involved (sometimes to a very large extent) in determining the outcome of a wide range of events. This paper presents a preliminary report of recent work that has started to examine the psychology and parapsychology of luck and outlines proposals for future work in this area. The paper first considers potential explanations (both normal and paranormal) for perceived luckiness, including, for example, selective recall of life experiences, different interpretations of the same events, unconscious detection and utilisation of information and psi. The paper then outlines a flexible methodology for assessing the validity of these potential explanations and discusses the effect that perceived luckiness may have on individuals' perception of themselves, their behaviour and decision making.

Introduction

In a recent pilot survey carried out by the authors, one hundred individuals were asked to rate how important they believed the concept of luck to be. Only 25% of the sample perceived it as having no importance, and 10% assigned it the highest possible rating. In another pilot study, students were asked to decide the degree to which the outcome of a wide range of events (e.g., live past 80 years of age, get a good degree, find or keep an attractive partner) were determined by chance, luck or other factors. The students believed luck played a role in determining the outcome of nearly all of these events. These results are in agreement with work carried out by Keren & Wagenaar (1985), in which subjects were asked to say whether the outcome of certain gambling and sporting events were due to chance, luck or skill. Subjects believed chance explained only a small amount of the outcome (18%), skill explained significantly more (37%) but that luck played by far the largest role (45%). In short, many individuals believe that luck plays an important role in their lives, and that it is involved (sometimes to a very large extent) in determining the outcome of a wide range of events.

Despite this, psychologists and parapsychologists have carried out little research into the topic. Much of the psychological work relating to luck has centred around 'Locus of Control' scales (see, e.g., Rotter, 1966; Ray, 1980). These scales ask individuals whether they believe the outcomes of events are determined by one's own effort or due to factors over which one has little control (e.g., destiny, fate and luck). Individuals believing that

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one's own effort or due to factors over which one has little control (e.g., destiny, fate and luck). Individuals believing that they possess control over their environment and life events are classified as having an internal locus of control; those believing the opposite are seen as having an external locus of control. Attributions to luck are treated as attributions to an external and uncontrollable source. This stems from the implicitly materialistic assumptions psychologists typically bring to their research. The subjects of their studies, however, may not share these assumptions. To them an attribution to luck may be neither external (e.g., if they consider themselves to be lucky people) nor uncontrollable. Our pilot studies suggest that many individuals do see luck as a causal factor, not just a description of the ways things went. According to this view good luck produces good outcomes, bad luck produces bad outcomes. Thus, the relationship between chance and luck appears quite complex and is worthy of systematic future investigation.

Similarly, only a small number of parapsychological studies have specifically examined the relationship between perceived luckiness and psi. This is perhaps surprising because most parapsychology experiments are essentially conceived on the notion that participants will perform beyond chance expectation on a task that would normally be determined by chance factors (such as card-guessing). In short, participants are encouraged to be 'lucky'. The few studies that have studied psi and luckiness have yielded mixed results. For example, Greene (1960) ran an initial study to investigate whether perceived luckiness (measured by the 'Greene Luck Questionnaire') correlated with PK performance. Subjects were given a PK test in which each subject attempted psychically to influence the throwing of a ten-sided die. Greene found no relationship between luckiness and PK. Ratte and Greene (1960) embedded a similar task into a game situation, in which the throws of the dice determined the outcome of different stages in an imaginary basketball game. They reported a significant positive correlation between self-rated luckiness and PK scores. Further, Ratte (1960) reported that perceived luckiness correlated with PK scores in three of four conditions of a dice-throwing task. More recent studies examining the relationship between luck and psi have also produced mixed results (Gissurarson & Morris, 1991; Rebman & Radin, 1995).

This lack of research is unfortunate, because such work could make significant contributions to the psychology of belief, delusional thinking, cognitive and motivational biases, implicit learning, risk taking, self-perception, and our understanding of psi phenomena. The authors have recently begun a systematic program of research into the psychology and parapsychology of luck. This paper reviews the research completed to date and outlines the methodology of additional studies that will be carried out in the near future.

Past Research

The concepts of luck and luckiness

The authors have recently carried out research designed to explore individuals' conceptions of luck and luckiness. One such study (Wiseman, Harris & Middleton, 1994) was concerned with individuals' thoughts about the general nature of luck (e.g., do people believe their luck to be concentrated in specific areas of their life or spread evenly over many such areas? What is the relationship between individuals' levels of perceived past luck and their expectations about future luck?). The study utilised a specially constructed 'Luckiness Questionnaire' which consisted of 18 questions concerning the degree to which individuals believed they had been lucky in the past, and expected to be lucky in the future. In this study, subjects were instructed to consider themselves lucky if events that have their outcomes determined, at least in part, by chance have, over time, seemed predominantly to work out well for them. Subjects were to consider themselves unlucky if such events seemed predominantly to work out badly for them. The first nine

questions concerned past luck in specific areas of their lives (i.e., games of chance, financial matters, personal relationships, physical health, mental health, exam performance, sporting performance, career and home life). The final nine questions concerned predicted future luck in the same specific areas. Three sets of results emerged: (i) the vast majority of subjects considered themselves lucky; (ii) subjects did not seem to feel that their level of luckiness was concentrated in specific areas of their lives, but rather viewed it as a more general concept that pervaded all aspects of their lives; and (iii) subjects who believed that they have been lucky in the past believed that they would be lucky in the future.

Another pilot study further examined the structure of belief in luck. One hundred individuals were asked general questions concerning the nature of luck (e.g., Are some people luckier than others? Are some people born lucky? Does luck run in families?). A factor analysis of the results indicated that individuals possessed one of three sets of belief: First, some saw luck as 'genetic', an attribute that was either present or absent at birth. Second, others believed that they could control their level of luck by engaging in various types of superstitious behaviour. The third group believed that their luck was given to them (and taken away from them) by a 'powerful other'. Individuals who believed themselves unlucky tended to fall into the first or third category, whereas lucky individuals tended to fall into the second. Thus, lucky individuals tended to believe that they were fortuitous because of their own ability to cause their luck. In contrast, unlucky individuals believed that their lack of luck was caused by factors outside their control.

Why do individuals believe that they are lucky or unlucky?

Another part of our research has explored the mechanisms that cause individuals to believe that they are either lucky or unlucky. This revealed a variety of possible explanations for individual differences in perceived luckiness.

Cognitive biases. Cognitive psychology has produced a large literature outlining the biases and errors individuals make when they perceive, manipulate and remember information. Many of these biases have been used to try and explain why certain individuals believe in the paranormal (French, 1992). Likewise, some of these biases could explain how people can mislead themselves into believing that they are especially lucky or unlucky.

Some studies (e.g., Seidlitz & Diener, 1993) have shown that optimistic individuals tend to recall events that have worked out well for them, whilst pessimistic individuals tend to dwell upon the more negative aspects of their lives. This bias could cause optimistic people to overestimate the number of events in which they have been fortuitous, and thus perceive themselves as lucky. The authors recently carried out a pilot study designed to assess this hypothesis. Subjects were classified as either 'lucky' or 'unlucky' using the 'Luckiness Questionnaire' outlined above. Each subject was then asked to predict the outcome of twenty coin-flips. After each toss the subjects were informed whether their predictions were correct. After all twenty flips had been completed, subjects were asked to think back and estimate how many coin-flips they had correctly predicted. In reality, both lucky and unlucky people had correctly predicted the outcome of the coin toss approximately the same number of times. However, the individuals who saw themselves as lucky overestimated the number of correct predictions they had made, whilst the unlucky group underestimated their success.

Similarly, Hintzman, Asher & Stern (1978) have shown that people selectively recall meaningfully related events. If this is the case, then it is possible that perceived luckiness is a function of one's susceptibility to such a bias. For example, one may attach significance to, and selectively remember, occasions when things went extremely well (or extremely badly) and

conclude that one has been lucky (or unlucky). In addition, individuals who see themselves as lucky may do so because they have a tendency to interpret events that happen to them as being lucky. That is, events that are open to subjective interpretation may be interpreted in a more positive manner and so lead to a perception of having been lucky.

Judgement of probabilities may also be a factor in perceived luckiness. It is well established that people in general are poor at estimating probabilities (Kahneman, Slovic & Tversky, 1982). Individuals who perceive themselves as especially (un)lucky may be especially poor at assessing the objective statistical likelihood of the occurrence of events in their lives. There has been some research suggesting that paranormal believers may be more likely than disbelievers to misjudge probabilities. For example, Blackmore & Troscianko (1985) found that believers generally performed worse than disbelievers on probability estimation problems, with believers consistently underestimating the frequency of chance occurrences. Such a lack of appreciation for how often a particular event will occur by chance may result in a preference for a paranormal explanation. Perceived luckiness may be maintained in a similar way.

Motivational biases. It has often been noted that gamblers sometimes behave as if they can control the outcome of chance events (Cohen, 1960). For example, Henslin (1967) describes observing gamblers tending to throw dice softly if they want a low number and hard for a high number. Gamblers would also concentrate and exert effort when throwing the dice. Such behaviours can be deemed perfectly rational if the game is perceived to be a game of skill.

In an important set of studies, Langer (1975) demonstrated that it was not just gamblers who were subject to this 'illusion of control'. People are particularly susceptible to this illusion when factors from skill situations (such as competition, choice, familiarity and involvement) are introduced into chance situations. For instance, Langer found that lottery participants who were allowed to choose their own ticket were more reluctant to re-sell their ticket than participants who were simply assigned a ticket. It was as if the act of choosing their own ticket led them to be more confident that the ticket would win than if the ticket had been randomly assigned to them. Thus subjects were not treating the lottery as a chance event but rather as one that is influenced by skill, even though they had no control over the event. This illusion of control has been shown to be a powerful and pervasive effect (see Abramson & Alloy, 1980, for a review).

Luck may be the psychological dimension by which people rationalise this belief. To them, chance events may be more controllable than psychologists often assume. If so, the implications of an attribution to luck for a forthcoming event or past outcome may be different from those researchers typically assume.

Implicit learning. A great deal of literature suggests that individuals are able unconsciously to register, and utilise, information in their surroundings (Reber, 1989). For example, it has been shown that individuals playing video games can unconsciously develop winning strategies through repeated playing of the game. They are not aware that they are developing these strategies, nor are they able to explain or articulate them (Berry & Broadbent, 1988). Psychologists refer to this phenomenon as 'implicit learning'. Perhaps 'lucky' individuals are skilled at unconsciously registering information around them. They then use this information to make decisions that work out well, cannot understand how such correct choices came about and so perceive themselves as being lucky.

Psi. It is conceivable that some individuals *are* actually luckier than others (i.e., apparently chance events consistently work out in favour of some individuals). These 'lucky' individuals might be using psi to create favourable situations. Luck may be viewed as being analogous in some ways to

a psi-mediated instrumental response (PMIR) as posited by Stanford (1974, 1990). This experimentally testable model attempts to provide a structure in which to examine ostensible extrasensory events in real life situations. According to the PMIR model, psi may operate at an unconscious level in accordance with the needs of the individual. Thus, a need to meet a particular person is enough to place us in the right place at the right time to meet that person. The experience of meeting someone just when we need them would be regarded by most as a stroke of good luck. 'Lucky' people (i.e. those for whom such situations occur more often than one might expect) would be those who are more adept at using their psi or, as Broughton (1992) speculates, they are 'psi-effective'. This line of thought follows on from the implicit learning theorists who claim that, under certain conditions, it is possible unconsciously to utilise information from one's environment in order to respond appropriately. The difference here is that information is acquired through psi.

As noted at the start of this paper, parapsychologists have carried out relatively few studies into psi and luck. Wiseman, Harris & Middleton (1994) recently started to address this problem by conducting an initial study to examine people's views about how lucky they considered themselves to be and the possible relationship between self-reported luckiness and performance on an ESP task. They found that subjects' responses regarding their past luck were positively correlated with responses regarding their future luck. Perceived luckiness was cohesive through various aspects of subjects' lives (e.g., health, relationships, career, etc.). Further, perceived luckiness was positively correlated with actual ESP performance for subjects who believed the ESP task to be dependent on non-chance factors. Perceived luckiness was not correlated with ESP performance for subjects who believed the outcome of the ESP task depended on chance. This study provides tentative support for the notion that luckiness and ESP are in some way related.

Future Research

Interviews

The authors have received a great deal of local, national and international media attention for their work into the psychology of luck (see, e.g., Beckett, 1994). Nearly all of the resulting newspaper, radio and television interviews have appealed for people who consider themselves especially (un)lucky to come forward and contact us. These appeals have produced a steady flow of respondents and we have now built up a considerable database consisting of over 120 'lucky' and 'unlucky' individuals. Most of these individuals have expressed an interest in becoming involved with our research and we have begun to carry out detailed interviews about their life experiences and thoughts about luck.

Evaluating potential explanations

A large part of our future research will attempt to assess the above explanations of perceived luckiness. We have developed a flexible computer program that examines individuals' performance on an apparently chance task. In essence, the participant attempts to guess the outcomes of a series of RNG-based coin-flips (either with or without trial-by-trial feedback) graphically displayed on the screen as a boy flipping a coin. At the end of a pre-determined number of trials, the participant is asked to estimate how many coin tosses were correctly predicted. This allows experimenters to discover if lucky individuals are overestimating the positive events (i.e., the number of times they correctly predict the outcome of the coin) that occur to them. As noted earlier, some support for this hypothesis was provided by a pilot study in which subjects were asked to say how many correct guesses they had made after twenty coin-flips made by the experimenter.

The 'implicit learning' hypothesis can be examined in a similar way by, for example, employing patterned sequences of heads or tails. The outcome of each coin-flip would not be randomly determined but

part of a pre-determined sequence. Subjects are not informed about the patterns in the sequences before the start of the experiment, nor are the patterns obvious enough to be consciously noticed during it. However, it is predicted that lucky subjects may be better at unconsciously learning that the sequences of heads and tails are not random and thus slowly become better at predicting the outcome of the tosses.

If the psi hypothesis is true, one would expect lucky people consistently to guess heads or tails correctly more than would be expected by chance. Unlucky individuals would perform below chance expectation. Thus, we would have a scenario reminiscent of the 'sheep-goat effect' (see, e.g., Lawrence, 1993). The program can also be run in the form of a PK task in which the participant is asked to increase the number of heads or tails.

In undertaking studies such as these, we hope to achieve a fuller understanding of the relationship between psychology, psi and perceptions of luck. It can be seen that there are many potential explanations for perceived luckiness. Indeed, it is unlikely that no single one of the various factors discussed above is solely responsible. Rather, they are likely to complement each other to some degree.

Conclusion

This paper outlines an ongoing research programme that aims to gain a fuller understanding of the psychology and parapsychology of luck. This research explores individuals' beliefs concerning luck and the mechanisms (both normal and paranormal) that underlie these beliefs.

This work is important for several reasons. First, such research may present an opportunity to observe and examine a unique aspect of psi ability. Second, the mechanisms involved in the formation and maintenance of belief in luck presents psychologists with an opportunity to evaluate (and possibly expand) theoretical concepts within cognitive and social psychology. Finally, and perhaps most importantly, belief in luckiness may have real implications for individuals' lives. Whether they see themselves as lucky may affect their behaviour, decision making, the ways in which they account for their experiences and the factors they take into consideration when formulating their plans and goals. Such beliefs may or may not be beneficial for individuals. For example, people who believe that they are lucky may well attempt tasks that they might not otherwise undertake in the expectation that luck will go their way. To the extent that this facilitates effective and sustained action they might succeed in large part because the self-belief prompts continued and coherent action in the pursuit of the goal. Alternatively, such beliefs may prompt people to undertake tasks beyond their capacities (in the expectation of 'lucky breaks') or to persist in the face of adversity when giving up the attempt is clearly more sensible.

In short, although it is early days yet, research into luck has the potential to make both theoretical and pragmatic contributions to mainstream psychology, parapsychology and possibly even influence the way in which individuals lead their lives.

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Geluk hebben: De psychologie en parapsychologie van mazzel

Samenvatting: Veel mensen geloven dat mazzel een belangrijke rol in hun leven speelt en het verloop van talloze gebeurtenissen (soms in belangrijke mate) bepaalt. Dit artikel is een voorlopig verslag van nieuw onderzoek naar de psychologische en parapsychologische aspecten van die geluksfactor en doet tevens voorstellen voor verder onderzoek op dit gebied. De auteurs bespreken eerst (normale en paranormale) verklaringen voor het gevoel dat men geluk heeft gehad, bij voorbeeld het selectief herinneren van gebeurtenissen, het verschillend interpreteren van dezelfde gebeurtenis, het onbewust waarnemen en gebruiken van informatie en psi. Vervolgens behandelt het artikel een flexibele methode voor het bepalen van de validiteit van deze mogelijke verklaringen. De auteurs bespreken ook de invloed die het idee van mazzel als bepalende factor kan hebben op ons zelfbeeld, ons gedrag en de wijze waarop we beslissingen nemen.

Glück haben: Psychologie und Parapsychologie von Glücksfällen

Zusammenfassung: Viele Menschen glauben, daß Glück eine wichtige Rolle in ihrem Leben spielt und daß es (mitunter in sehr großem Ausmaß) den Ausgang von vielerlei Ereignissen bestimmt. Der vorliegende Beitrag stellt einen vorläufigen Bericht über jüngere Untersuchungen zur Psychologie und Parapsychologie von Glücksfällen vor und entwirft Vorschläge für künftige Arbeiten auf diesem Gebiet. Zunächst werden mögliche Erklärungen (sowohl normaler als auch paranormaler Art) für den Eindruck, Glück gehabt zu haben, vorgestellt, darunter beispielsweise selektive Erinnerungen an Lebenserfahrungen, unterschiedliche Auslegungen gleicher Ereignisse, unbewußtes Aufspüren und Nutzen von Informationen und Psi. Dann wird eine flexible Validierungsmethode für solche möglichen Erklärungen entworfen und der Effekt diskutiert, den erlebte Fälle von Glück auf die Selbstwahrnehmung, das Verhalten und die Entscheidungsfindung von Menschen haben.

Etre chanceux: La psychologie et la parapsychologie de la chance

Résumé: Nombreux sont les invidus qui croient que la chance joue un rôle important dans leur vie et qu'elle est impliquée (parfois dans une très large mesure) dans la détermination d'un large spectre d'événements. Cet article présente un rapport préliminaire d'un travail récent qui a commencé à examiner la psychologie et la parapsychologie de la chance et qui propose des lignes pour un travail futur dans ce domaine. Cet article considère d'abord des explications potentielles (à la fois normales et paranormales) pour la chance perçue, y compris, par exemple, le rappel sélectif d'expériences vécues, différentes explications des mêmes événements, la détection et l'utilisation inconsciente d'information et du psi. Cet article propose ensuite une méthodologie flexible afin d'évaluer la validité de ces explications potentielles et discute l'effet que la chance perçue peut avoir sur la perception qu'ont les gens d'eux-mêmes, leur comportement et prise de décision.

Sobre as pessoas que têm sorte: A Psicologia e a Parapsicologia da sorte

Resumo: Muitos indivíduos acreditam que a sorte desempenha um papel importante em suas vidas e que ela está envolvida (às vezes em grandes proporçõcs) na determinação do resultado de uma ampla gama de eventos. Este artigo apresenta uma relatório preliminar de um trabalho recente que foi iniciado para examinar a psicologia e a parapsicologia da sorte e eshoça propostas para un futuro trabalho nessa árca. O ortigo primeiro considera explicações em potencial (tanto normais quanto paranormais) para a percepção de quanta sorte se tem, incluindo, por exemplo, lembranças seletivas de experiências de vida, interpretações diferentes dos mesmos eventos, de-

tecção e utilização inconsciente de informações e psi. O artigo, então, esboça uma metodologia flexível para avaliar a validade dessas explicações em potencial e discute o efeito da percepção de quanta sorte se tem sobre a percepção que os indivíduos têm de si mesmos, seu comportamento e a tomada de decisões.

Teniendo Suerte: La Psicología y la Parapsicología de la Suerte

Resúmen: Muchas personas creen que la suerte juega un rol importante en sus vidas y que está relacionada (a veces en gran medida) con determinar el resultado de una amplia gama de eventos. Este trabajo presenta un reporte preliminar de investigaciones recientes que han comenzado a examinar la psicología y la parapsicología de la suerte y presenta sugerencias para futuras investigaciones en esta área. Primero se consideran posibles explicaciones (tanto normales como paranormales) para la percepción de la suerte, incluyendo, por ejemplo, el recuerdo selectivo de experiencias, diferentes interpretaciones de los mismos eventos, detección subconsciente, utilización de información, y psi. Entonces se presenta una metodología flexible para evaluar la validez de estas posibles explicaciones y se discute el efecto que la percepción de suerte puede tener sobre las percepciones de los individuos sobre sí mismos, sobre su comportamiento y sobre tomar decisiones.

Essere fortunati. Psicologia e parapsicologia della buona sorte

Sommario: Molti individui ritengono che la fortuna giochi un ruolo importante nella loro vita e che sia coinvolta (talora in misura molto ampia) nel determinare gli esiti di una vasta gamma di eventi. Questo articolo è un resoconto preliminare di un recente lavoro che ha iniziato a esaminare la psicologia e la parapsicologia della fortuna e prospetta alcune ipotesi per ricerche future in questo campo. L'articolo considera dapprima alcune possibili spiegazioni (sia normali che paranormali) per ciò che viene percepito come fortuna, ivi compresi per esempio il ricordo selettivo di particolari esperienze, le diverse interpretazioni degli stessi eventi, l'individuazione inconscia e l'uso delle informazioni e della psi. Il testo illustra poi un sistema flessibile di valutazione della validità di queste potenziali spiegazioni e discute gli effetti che ciò che viene considerato fortuna può avere sulla percezione che gli individui hanno di se stessi, sul loro comportamento e sull'assunzione di decisioni.

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Experimentation or Experience? Issues about Validity

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Abstract: There are a number of related debates in parapsychology, but the focus of this paper is the controversy about whether parapsychology should concentrate on experimental methods or on purely experiential approaches (i.e., those that are not concerned with the validity of the psi hypothesis). I compare and contrast issues in this particular debate with the controversy in memory research over whether one should focus on experimental methods or on naturalistic approaches. I argue that, in parapsychology, the issues in this debate are conceived in such a way that the two alternatives veer towards two extremes of subjectivity and objectivity. It is due to the experimentation or experience controversy that the question of whether or not parapsychology should be a science arises at all. What ultimately underlies the whole debate is a failure to address the issue of the precise nature of parapsychology's leading questions. I conclude that parapsychology should use a variety of methods and that a closer investigation of some of the issues arising from the paper about validity and about parapsychology's aims may be beneficial.

Introduction

There are a number of controversies within parapsychology as to the direction that the field should take and the methods that it should use. One of these, in its crudest and most exaggerated form, is whether experimentation is the best way for parapsychology to approach its subject matter or whether the primary focus ought to be on the experiences themselves regardless of whether the experiences are genuinely paranormal in nature.

There are at least two examples of similar debates in mainstream academia about the tension between experimentation and everyday experience. They are (i) the debate in psychology about research on memory, where the arguments centre on whether naturalistic or experimental methods are the more fruitful approaches; and, (ii) the (currently informal) tension in philosophy about whether "analytic" philosophy is better than the more experience-centred approach of "continental" philosophy. Little of value has been published on the latter debate, although it has aroused enough controversy and confusion for there to be a call for papers on the issue in the *Monist* (a prestigious Philosophy journal) for 1997. In the former — the debate on memory — however, there has been a flurry of publications on the very "experimentation versus everyday experience" issue.

My aim here is to review some of the arguments in the mainstream psychology literature on the debate and to see to what extent these arguments mirror or differ from those advanced by parapsychologists. This review will bring to light some problems that are peculiar to parapsychology. In this way a clearer idea of the central problems for parapsychology should come

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into view. It may also help parapsychology to learn from the history of the debate in another discipline.

The Attack on Experimental Method in Memory Research and Parapsychology

In 1978, at what has since been termed an infamous conference (Klatzky, 1991) in the field of memory research, Neisser (1978) launched an attack on the experimental method. At least, this is how Neisser's talk was received, although the editors of the published papers (including Neisser's 'attack') claim that the aim of the conference (of which Neisser's paper was the opening address) was not to 'drive a wedge between theoretical and practical aspects of memory' (Gruneberg, Morris & Sykes, 1978, p.v). Interestingly, for historical record, Neisser claimed in his paper that the same discontent with experimental methods had been expressed almost 40 years earlier by Bartlett but, Neisser noted, the challenge to experimentation had remained largely ignored (Neisser, 1978, p.3).

Even a quick glimpse at some of Neisser's arguments will demonstrate the superficial similarity between the debate in parapsychology and the debate in memory research. Neisser's (1978) paper focused very much on the meaning of memory for the individual. He argued, for instance, (i) that failures in memory are better understood by examining 'what actually happens in them, rather than the theoretical manipulation of abstract and *a priori* concepts' (p.10), (ii) that 'going public' (p.16) with one's memories can have profound consequences for an individual and (iii) that in everyday life there may be functionally different types of memory (p.14). All of these points have been echoed by parapsychologists who believe that parapsychology should attempt to approach its subject matter by means other than experimentation. For instance, White has advocated an approach based on the meaning and understanding of experiences (White, 1993c). She has encouraged people to 'go public' (White, 1993b) about them and she is trying to compile and categorize various 'exceptional human experiences' (White, 1993e).

White is not the sole parapsychologist to take a similar view to Neisser. In his paper *Parapsychologie tut man* Gauger likens parapsychology to a character in Joyce's *Finnegan's Wake* called Humphrey Chimpden Earwicker. This character continually observes himself in the novel but never actually takes part. Gauger writes that similarly 'the self-criticism which parapsychology continually desires and in which it forever engages works in such a way that parapsychology becomes linear, parasitic and self-destructive because parapsychology thereby remains *outside* of its subject matter and it would prefer to sacrifice its subject matter rather than to let it be said that its subject matter is unobjective.' (Gauger, 1992, p.52). Here, the criticism is that parapsychology is so concerned with itself that it often fails to investigate its purported subject matter. For Gauger the scientific approach is too narcissistic; it fails to extend out to its true subject matter (i.e., experience). Correspondingly, Neisser notes that when memory researchers tell people of their line of research, people will often describe all sorts of interesting things — such as how they were able to find their way round their home town after a thirty year absence, how their aunt has a formidable capacity for remembering Shakespeare, how they have a tendency to forget appointments, and so on. Yet, Neisser claims, memory researchers have nothing to say to people about these issues; they fail to address people's questions about their memories.

To take a third and final example, Braud (1994) remarks that in many ways what he has learnt from parapsychology he knew already from his own experiences. This echoes Neisser's contention that the empirical generalizations from scientific memory research are unsurprising and that most people already know them from their own experience.

These are just some of a variety of possible examples, but one could go through virtually the whole of Neisser's paper and find striking parallels with points made by

those advocating a move away from experimentation in parapsychology. Thus the unease with experimentation is evident in both disciplines and the unease superficially appears to be for very similar reasons.

Is laboratory experimentation, therefore, an approach in decline?

The Arguments in Support of Experimentation in Memory Research and in Parapsychology

A decade after the release of Neisser's paper, Banaji and Crowder published a similarly controversial paper, this time arguing for a return to experimentation in memory research and claiming that the "everyday memory" approach was bankrupt (Banaji & Crowder, 1989). They argued that in the early 1970's there had been some controversy in social psychology when it started to try to become an experimental science. The controversy was settled, Banaji and Crowder said, in favour of hypothesis testing in the laboratory.

In response to the naturalistic workers' criticisms that experimental memory research does not provide us with anything that is applicable to everyday situations, Banaji and Crowder argued that internal experimental validity is crucial for memory research. Without internal experimental validity — i.e., rigorous experimental setups in which all factors are sufficiently controlled — there can be no relation between those results and the external world at all. They claim, moreover, that the layperson's intuitions about memory can be "complete nonsense" and that experimental results are not always what one would intuitively guess.

It appears, superficially, that the criticisms of experimental research in parapsychology are the same as those put forward by Neisser in advocating naturalistic methods in memory research. Therefore, one might expect the response from the experimentalists in parapsychology to echo those advanced by Banaji and Crowder. Berger (1988) effectively mimics Banaji and Crowder's point about internal validity and generalizability in his review of Susan Blackmore's *Adventures of a Parapsychologist* when he writes that 'My training taught me to begin the criticism of an experiment with its design. If the design is seriously flawed ... then one cannot draw *any* conclusions from the study' (p.377). However, it is nevertheless a fact that within the actual "experimentation versus experience" controversy most of the experimentalists in parapsychology remain strangely silent.

Although Radin (1991), for example, has argued that experimental statistics can compel belief in psi phenomena and although Irwin (1994) has noted that without an extensive experimental foundation parapsychology would have been dismissed to an even greater extent than it already is, neither of these points is directed at counteracting the issue about experimentation's lack of generalizability to everyday experience. Irwin's point, for instance, is aimed purely at showing how experimental work is (and should be) relevant to the external world called "science" rather than at defending experimentation's relationship to the external world in which people live and work (that is, presumably, the external world to which the memory researchers refer). And Radin's argument is not relevant to the issue of generalizability, for it does not show (nor was meant to show) that the findings of experimental research in parapsychology are *related* to the outside world. Rather, Radin's argument is intended to show how the outside world (i.e., outside attitudes) may *change* when faced with experimental results. The emphasis in both of these points is entirely different.

Both responses above are effectively defending the notion of parapsychology as a *science*. Irwin notes that parapsychology's acceptance is due to its being a *science* and Radin's argument too is that *scientific, experimental methodologies* will be what some people will find persuasive.

Thus, the arguments above defend the notion of parapsychology as a *science*. Also, they do not tackle the issue of experimentation's relevance to people's experience. Consequently, one may be

tempted to assume that in parapsychology the central issue in this particular debate is whether or not parapsychology should be a science and not whether or how science can generalize to the outside world. A more careful study of the experimentation versus experience debate in memory research will bring out more clearly the contrast between that debate and the way in which superficially similar controversies are conceived in parapsychology. The main difference in debate between the two disciplines is due to various and conflicting notions of validity and it is precisely the issue of validity that is controversial. Examples of the different types of validity that come into play will include what I shall term as 'scientific validity' (defined loosely here as the attempt to show, by means of experimentation, what holds true under which conditions), 'phenomenological validity' (defined loosely here as the examination of experience for its own sake and bracketing out questions about whether or not such experiences are, for example, truly due to anomalous means) and 'academic validity' (defined loosely here as corresponding to the rigorous and accepted methods of an established academic discipline (whether arts or sciences)). In the following I shall briefly outline the arguments for and against the perceived need for scientific validity (i.e., the need to determine truth conditions experimentally in the quest for knowledge) in both parapsychology and memory research.

The Need for Scientific Validity

Regarding validity, Banaji and Crowder argue that in memory research internal, experimental validity is the crucial factor. The essential question is one of discovering what is true under which conditions and what is not. And, according to Banaji and Crowder, this notion of scientific validity is most easily achieved in laboratory settings and is attainable only with difficulty in naturalistic settings. In the latter there are many other factors at play and as a result generalization is often not possible.

There is a parallel here with parapsychology. It is generally acknowledged that there is rarely any guarantee that an experiential report is of an experience that was genuinely 'paranormal' or anomalous in nature. Indeed, a person's attribution of paranormality to such experiences may well be due to mistaken perceptions, misremembering or a whole variety of such factors. I would even surmise that this problem about the genuinely anomalous nature of the relevant reported experiences was the primary impetus for parapsychology having used precisely the *scientific* method as its model. Banaji and Crowder (1989, 1994) argue that naturalistic memory research is incapable of controlling the environment with sufficient rigour for generalizability to be possible. Likewise in parapsychology it is because many reports of spontaneous psi experiences cannot be shown indisputably to be due to anomalous means (rather than, for example, due to misperceptions or coincidences) that parapsychologists have generally opted for the scientific approach. As a result, one would expect agreement about moving psi into the laboratory. One would also surmise that those in parapsychology who advocate a move away from laboratory experimentation would make much the same arguments as those who argue for naturalistic rather than experimental methods in memory research. Namely, those arguing for a move away from experimentation would criticize laboratory experimentation on the grounds of its inapplicability to real life psi. They would urge parapsychology to investigate psi scientifically in its natural, everyday settings.

Stanford (1990), for example, has voiced a similar unease about the applicability of the results from experimental parapsychology to everyday life (citing, for instance, the sheep-goat effect). Beloff (1995) too has claimed that a purely experimental parapsychology 'is a discipline that has no historical roots and little relevance to real life' (p.26). However, in the main parapsychologists have not taken this path in criticising the experimental method. One sector argues that experiential data and

reports of anomalous events can themselves be evidential in nature (e.g. Stevenson, 1968, Braude, 1991). These approaches, however, have not taken the view that experimentation lacks relevance to *everyday* life. They have focused on either (i) the way in which certain *exceptional* cases can be viewed as good evidence for psi or (ii) how experiences can be used collectively as evidential data. The issues here, therefore, are *primarily* (but not exclusively) about what constitutes good evidence for psi. They do not focus on the nature of experience itself and its context within the experiencer's life. Other parapsychologists, however — and it is with their arguments that I am concerned — do not aim to retain scientific validity in everyday settings. Instead, they are interested in whether there are other (non-scientifically) valid approaches to psi. This sector questions whether experimental methods really are the best ways in which to study psi.

The Need to Move Away from Scientific Validity

The following paragraphs will illustrate just three approaches advanced by parapsychologists that set the notion of scientific, experimental validity to one side. Although these approaches are all distinct they do nevertheless all submit that experimentation is not necessarily the best way for parapsychology to proceed. For this reason I will subsume them all under the title of 'experiential' approaches, even though they are all distinct in methodological flavour. There are, naturally, many other similar approaches (White, 1992, lists a number of diverse methods), but the three following instances will serve as general examples. More importantly, all these methods differ from the everyday memory approaches. These experiential approaches differ too from the 'evidential' experiential approach of, for example, Braude and Stevenson above. I will indicate later where I think this different controversy over what is evidential fits into the overall schema. The focus of my paper lies with the broader issues about how a *purely* experiential approach is conceived in contrast to experimental methods and how this particular type of approach both mirrors and contrasts with the debate in memory research. The way in which this approach differs from naturalistic methods in memory research is now my concern.

(a) Experiential data approach

I will take Schouten (1983) as my first example. Schouten has used experiential data in an objective way by collecting and categorizing various aspects of the spontaneous experiences in L.E. Rhine's database (amongst others) without particularly concerning himself about the veridicality of the experiences. He has cogently argued that such an approach can lend insight into the sorts of experiences that may provoke someone to *believe* that their experience was paranormal in nature. He maintains that the aim of parapsychology is to gain a better understanding of the experiences and that the question of the existence of ESP should be the final result and not the premise. If there are correlations between (i) the phenomena, (ii) the attribution of paranormality to them, and (iii) the personality characteristics of the people who believe they have experienced something of a paranormal nature, then this alone would provide sufficient reason to investigate them further. Thus, although Schouten takes an objective approach, his view is not as sympathetic to experimental research as naturalistic workers in memory are towards laboratory experimentation in their field. For Schouten the existence of psi is not what parapsychology should concern itself with at this point in time. White (1993a) too suggests that experimentation should not be pursued until much later in parapsychology's endeavour. Thus neither Schouten nor White are concerned about the scientific validity of the phenonena in the first instance. Most of the naturalistic workers in memory, however, are quite happy for laboratory work to continue (Klatsky, 1991). In memory research there is no debate at all about whether or not

laboratory work should be carried out because most agree that it should be.

(b) Meaning-Centred Approach

To take an example of a different and yet related approach in parapsychology, White (1993a) argues that the essential element of psi experiences lies in their meaning and in their effect on the individual who has the experience. White's position appears to shift from time to time, sometimes seeming to promote a dual (i.e., experimental and experiential) approach (White, 1992), sometimes seeming to advocate a specifically anti-science approach (White, 1993c) and sometimes saying that she is deliberately exaggerating (White, 1991). One could, however, describe her overall view as advocating a move away from science, knowledge and explanation, instead endorsing a meaning-centred approach. Gauger (1992) is of a similar opinion. He writes, for example, that 'Naturally, parapsychology lies at the point of intersection between the arts and the sciences. The former are defined as the sciences of 'understanding': a painting, a drama, a historical event — all these are only partially and trivially describable in causal or purely objective terms' (p.54). In similar vein he later remarks that 'Two years ago I had to listen to an objection from a horrified referee who said I was trying to make parapsychology into an art. Yes, that is indeed what I would like to do. From this one can even gain a new kind of rhetoric.' (p.61) Both of these views differ from the debate in memory research because both views want a move away not only from what I have termed as scientific validity, but also from science *tout court*. One reason for advocating this move away from science is the contention that experimental parapsychology simply has not produced strong enough results to justify continued (predominant) use of the experimental method. The "old rhetoric" in many ways fails its subject matter. This, though, is not the case for naturalistic workers in memory research. For those in memory research the sole issue is whether or not scientifically valid results can be gained even in everyday settings.

(c) Phenomenological approach

Irwin will serve as my last example. Irwin, like White, appears to be in two minds at times. At the beginning of one paper he writes that 'without an extensive experimental foundation parapsychology would be dismissed out of hand by an even greater extent' (Irwin, 1994, p.10) and yet at the end of the same paper he suggests that it is the phenomenological method that might provide parapsychology with greater acceptance' (*Ibid*, p.65). Thus on the one hand he appears to think that scientific, experimental validity is the way forward for parapsychology and on the other hand he believes that the phenomenological approach (that brackets out the question of scientific validity) will bring mainstream acceptance for parapsychology. The two approaches can, of course, go hand in hand. However, these two citations demonstrate the conflict between how to gain acceptance (academic validity) in two distinct areas of validity (scientific and phenomenological validity) that appear to belong to two distinct fields of inquiry (experimental, "hard" science and humanities/social science).

Moreover, Irwin notes that in parapsychology the experiential data approach is sometimes the principal way in which to gain information on some types of experiences. Some things — such as NDEs — that may be thought to fall under the rubrik of parapsychology are inaccessible to experimental study. This is similar to the contention in memory research that long-term memory is inaccessible to laboratory experimentation. The difference here, however, is that even in naturalistic memory research long-term memory is examined in terms of its scientific validity, that is, in terms of discovering the conditions under which long-term memory is likely to be correct. Contrastingly, in parapsychology NDE research, for example, does not focus so much on whether, for instance, the person *really did* die or whether their report

of their experience is *correct*. It centres rather on the commonality between reports and on the effect that people claim the experience had on their life (White, 1993a). Similarly, Irwin remarks that experiential reports (i.e., everyday psi) are informative on issues *other than authenticity*. It seems that the aim of the experimental method, for Irwin, is primarily that of determining authenticity and that experiential approaches have different aims and different ways of being valid areas of research. In memory research, however, even the everyday methods still focus on the issue of authenticity and on methods for determining scientific validity.

It should be clear from the above that the arguments against the experimental method in memory research differ from those put forward in parapsychology. In memory research those advocating naturalistic methods maintain that their research is sufficiently rigorous and that their results are scientifically valid. In support of their view they stress (a) the amount of control that is available in naturalistic settings and (b) the advantages and additional insights that such research can lend to experimental research. Certainly, they never question the need for *scientific* validity. Consequently, the naturalistic response to Banaji and Crowder is to deny that laboratory situations are the only ones in which scientifically valid results and truly scientific research can be found.

In parapsychology, however, those who use the purely experiential approaches wish to move away from issues about scientific validity in using those methods. This applies whether the approach objectively analyses experiential reports, focuses on the meaning of experiences, or concentrates primarily on the phenomenology of the experiences. Whereas naturalistic memory workers never claim their subject should move away from issues about scientific validity, those advocating the purely experiential approaches in parapsychology do make this claim.

It is natural, and perhaps informative, to ask why this difference between research in memory and research in parapsychology has come about. It is possible that the reason is in part due to the reactions of proponents of various views. The experimentation versus everyday memory debate rose in importance in the early 1990s after Banaji and Crowder's controversial article in the *American Psychologist* in 1989 arguing that naturalistic research was "bankrupt". Thus, the naturalistic workers replying to Banaji and Crowder's article were defending themselves against criticisms — published criticisms — about their methods. The criticisms raised against naturalistic research focused on the alleged lack of proper controls and the scientific ineptitude of such research. It is understandable, therefore, that responses to the criticisms primarily argued for the scientific viability of naturalistic research.

With parapsychology, though, the matter is different. There have been few, if any, *published* critical responses to the experientialists' criticisms of experimental parapsychology. And, whether or not one believes that there is a divide about this issue in parapsychology, it is clearly evident that some parapsychologists are critical of the idea that parapsychology should adopt a specifically experimental approach. Few responses at all have been made in response to, for example, Schouten's claim that experimental work should follow only much later in parapsychology's enterprise and White's recommendations that parapsychology needs a change of emphasis. This lack of response does not mean that the criticisms of experimentation (e.g., it requires too much initial commitment to the psi hypothesis, it has not produced much in the way of worthwhile results, etc.) do not exist or are, therefore, not an issue. In memory research it was some 50 years after the initial unease with experimentation that any experimentalists responded with their own replies, so it may simply be that parapsychology is at an earlier stage of debate. Thus the comparison offered here may provide some insight into possible future debates in parapsychology.

If one looks at Neisser's original paper that sparked off the everyday memory

controversy, the overriding impression is that at this initial stage the memory research debate mirrored the debate in parapsychology much more closely. To some extent, it is even questionable whether Banaji and Crowder's paper actually touched many of the points that Neisser originally made. They did, however, succeed in turning the debate back towards an agreement about the importance of scientific validity. And it is precisely here, of course, that the debate in parapsychology currently differs from that in memory research. Moreover, if Banaji and Crowder's paper did not truly address many of Neisser's points, then perhaps the issues in parapsychology will take on an altogether different flavour.

Evidently this quasi-historical explanation for the difference in debate between parapsychology and memory research is by no means the whole explanation. Although Neisser's arguments emphasized meaning, he never argued for a move away from experimentation (cf Klatzky, 1991). Moreover, papers identified as 'naturalistic' were also intrinsically experimental in nature. Thus Ceci and Bronfenbrenner (1991) conclude that 'this is not the time to foreclose on rigorous research in everyday settings or to write premature epitaphs for a scientific approach that appears to be alive and thriving' (p.31). Although Neisser's paper emphasized meaning, it did not advocate a turning away from experimental methodology. Those following Neisser likewise generally approached their subject matter in accordance with the principles that apply to laboratory experimentation. In parapsychology, however, even at this (presumably) early stage in debate, the arguments from those advocating non-experimental approaches emphasize far more those methodologies that are not concerned with scientific validity at all.

The question therefore remains: why is the necessity for scientific validity a controversial issue in parapsychology when, even in the very beginning of the debate, this was never truly an issue in memory research?

The answer may in part lie in the fact that the notion of validity covers two different things in the parapsychology debate. In memory research the overriding concern lies with showing that the *results* obtained are scientifically valid. That is, when naturalistic researchers defend their field, they show how many controls they were able to put in place, how the results can be replicated and so on. In parapsychology, however, the question of scientific validity cuts straight into the question about whether its very *subject matter* is a 'valid' area for *scientific* research. Research into memory, for instance, does not need to ascertain that memory is in general possible. It is uncontroversial that the vast majority of the human population will have memories and that in ordinary circumstances those memories usually bear some relation to events that really did happen. With parapsychology, however, there is no consensus in the general population that there are such things as veridical psi experiences to be investigated. Indeed, for the majority of the *scientific* community parapsychology is a bogus scientific endeavour (McClenon, 1982) because in their view there simply is nothing there to investigate or to elicit.

As a result, when parapsychology enters the laboratory and thus the field of experimental science, at least part of what is always at stake is whether or not there are going to be results that may be indicative of some form of genuinely anomalous interaction. Parapsychology becomes a field whose inquiry is in part an attempt to demonstrate its own validity. That is, in parapsychology the question of the scientific validity of the results is also inevitably a question about the very validity of parapsychology itself. It is in part because some view it as problematic that parapsychology comes to be dependent on its results for its own validity as a scientific discipline that some parapsychologists are inclined to argue that parapsychology can be a valid field of research (e.g., as a phenomenological discipline or even as an arts subject) without having to rely on the validity of the psi hypothesis. That is, the argument is that the two types of validity

('academic' validity and 'scientific' validity) are not interdependent.

As a result the notion of validity in parapsychology is controversial on two accounts. Firstly, it is controversial because the validity of the psi-hypothesis is uncertain — i.e., it is disputed whether there is such a thing as psi that parapsychology could elicit in scientifically controlled conditions (cf Ellison, 1996). It is from within this dispute that approaches such as Stevenson's and Braude's — that maintain that experiential data can serve as evidence for psi — enter in as a separate, though linked, set of controversies. Secondly, it is a matter of contention whether questions about the validity of the psi hypothesis (and thus scientific validity) should be abandoned in favour of increasing the validity of parapsychology as a field of academic (rather than scientific or experimental) inquiry. That is, the contention is often that parapsychology may do better to pursue, for instance, a phenomenological approach rather than to seek experimental grounding. These two issues are often intermingled and confused. Both controversies are distinct from the issues that are raised in memory research.

It is because validity is a less controversial issue in memory research that the controversies in memory research are often less extreme than those in parapsychology. The following sections will show how the issues about validity in parapsychology — when compared to similar issues in memory research — tend to foster more extreme methodologies than in memory research. For ease of reference I will term these extremes as the objective and the subjective approaches. The objective approach concerns itself primarily with the problem of the validity of the psi hypothesis and the subjective approach focuses on (a) problems with the former and (b) promoting a parapsychology that is independent of the psi-hypothesis.

(a) The objective approach

In parapsychology, investigating psi in its everyday environment may appear to be absurd, because it is presupposed that psi experiences do not readily occur *every* day in a manner that easily lends itself to scientific investigation. Thus, one cannot go out and observe on demand people's psi experiences. Even field investigators have to wait until they are alerted that there is (may be) a case they can investigate. Thus, the primary way to study psi objectively and on demand is to attempt to elicit psi in laboratory conditions.

In bringing the study of psi into the laboratory, though, the emphasis comes to be one of trying to find "evidence" for anomalous interaction. Here, any occurrence of statistically significant results is noted. Even when one considers process oriented research in parapsychology a primary factor is always to note whether or not there is any evidence that may point to psi. To this extent, then, (whether or not parapsychologists want to admit to it) in the laboratory psi is treated in a manner similar to attempts to discover a hypothesized physical element by experimenting with variables (e.g., trying out different mental strategies, various experimental setups, differing environmental conditions). That is, the whole study of psi — including psi itself — comes to be objectified in so far as psi is understood as something "there" to be elicited by primarily experimental means. In experimental memory research, however, memory is treated less as an object to be obtained because the emphasis is on the effect of variables on memory rather than on whether memory is actually occurring.

Consequently, parapsychology laboratory research has a far greater emphasis on the notions of objectivity and scientific validity than does memory research because parapsychology treats its subject matter as something there to be elicited. If naturalistic memory workers object that experimentalists in their field treat memory too much like an object, then the same criticism applied to parapsychology will be doubly acute.

Precisely because of this constant need to determine whether or not psi even occurs in a given experiment and because of

parapsychology's dependence on statistically significant results, some people are calling for a different approach altogether.

(b) The subjective approach

One can sense a frustration with scientific parapsychology's inability to provide *strong* evidence for psi or *strongly* replicable results. Since this is not remotely a problem for experimental work in memory (i.e., there is no need to provide evidence for memory *tout court*), it is hardly surprising that memory researchers do not rally against the experimental approach *per se*. But in parapsychology it is often *because* the evidence is perceived to be *unconvincing* (albeit statistically significant) that there is a faction advocating a move away from questions of scientific validity *at all*.

When parapsychologists play down the need for scientific validity, the arguments in memory research about whether naturalistic methodologies are scientifically valid become irrelevant to parapsychology. Once scientific validity is thought to be irrelevant, the experientialists in parapsychology *encourage* subjective input. They stress validity purely (a) in terms of the experiencer (e.g., they ask about the meaning of the experience for the experiencer, irrespective of whether the reports are 'true' accounts of what happened) or (b) in terms of how parapsychology can be viewed as an accepted field of research by putting aside the question of whether there is supportive experimental data and advocating, for example, sociological approaches (McClenon, 1991). The subjective parapsychological route is thus far more subjective in content than is naturalistic work in memory.

In parapsychology, therefore, the extreme objective approach arises through the concern for parapsychology to be scientifically valid. On the other hand, the extreme subjective approach that puts the notion of scientific validity to one side, arises through the concern for parapsychology (a) to hold true to the experiencer or (b) to be academically valid (occasionally even proposing that parapsychology be conceived of as an arts discipline). As a result these two paths in parapsychology appear to be exaggerated modes of the memory research controversy. Experimental work in parapsychology seems to treat psi more like an 'object' than experimental work in memory research treats memory. The 'experiential' approaches above appear to be even more 'subjective' than the naturalistic approaches in memory research.

Moreover, it would appear that parapsychology's inclination towards two extremes is due to the arguments being conceived in such a way that academic validity is retained by *dropping*, at least temporarily, the notion of scientific validity. In memory research what is emphasized is ways in which other approaches can *complement* and *enrich* traditional methods without dropping the agreed notion of (scientific) validity. Arguments in memory research show how diary studies, for example, have helped reveal the nature of flashbulb memories (i.e., those memories of what one was doing when one heard about an important world event). In parapsychology, however, the reasons for dropping scientific validity are often couched as if dropping scientific validity were a tactical measure to increase parapsychology's standing in the academic community. Fundamentally, though, the reasons for dropping scientific validity are based on deep-rooted questions about the suitability and scope of experimental methodology. White (1994), for instance, argues that the quest for scientific validity is inconsistent with parapsychology's original aim of understanding psi experiences (because science aims only to explain them). Schouten maintains that the quest for scientific validity endorses an undesirable predisposition to accept the psi hypothesis. Thus the experimental and experiential approaches are far more opposed in parapsychology than in memory research. This is not only because the notion of scientific validity is dropped by the experiential approach in parapsychology, but also because the very utility and presuppositions behind scientific validity are questioned therein.

Behind these questions about the utility of scientific validity there lies the more fundamental issue of whether parapsychology knows or is clear about which question(s) it wishes to answer. What are parapsychology's aims, what presuppositions would it want to endorse/not endorse? What are the particular questions that parapsychology needs to answer? Neisser's original controversial paper was entitled 'Memory: What are the Important Questions?'. A similar paper in parapsychology, or even a retrospective look at Rhine's (1959) article entitled 'What do Parapsychologists want to Know?', may well be enlightening.

What should be clear now, however, is that it is vitally important for the various notions of validity to be clearly conceptualized and structured in order to understand what the root problems and issues are. It is not entirely clear that when the issues that underlie the essentially divisive questions about the pros and cons of experimentation are untangled, parapsychology will necessarily have to take only one particular path.

Concerning memory research Tulving (1991) writes, for example, that: 'Memory, like countless other objects of scientific curiosity, can be studied and described at many different levels, from many different perspectives, using many different approaches and methods. There need not be, and there usually is not, any conflict between these different approaches and different levels. Normally they are complementary' (pp.41-42). Ceci and Bronfenbrenner (1991) similary argue that the choice between laboratory and non-laboratory methods should be one that is made in the context of particular research questions.

Thus, the conclusion may be that just as much as experimentation may not always be the appropriate method in memory research, so too may this hold for parapsychology. For instance, if one's research question is about the meaning of parapsychological experiences, then it is inappropriate to use the experimental method. Similarly if one's interest and desire is to see whether or not psi can be proven and to determine the precise conditions under which it occurs, then case studies are rarely going to be the most appropriate means for determining this with any certainty. The primary issue is whether these are both the 'important questions' in parapsychology. If they are, then both questions need to be answered using the appropriate methods (cf White, 1994).

Of course, the suggestion that a variety of methods should be embraced by parapsychology is nothing new. Braud (1994), for example, writes 'In parapsychology, laboratory experimentation certainly has its place; but this is one place among many. Field work and the study of the spontaneous experiences of others also have their places. But these are only two additional places among many' (p.294). Watt (1994) argues for theoretical research to be driven more by data and for data collection to be driven more by theory. Irwin (1994) writes that '*In addition to* proof-oriented and process-oriented research, parapsychology could inquire into the nature of parapsychological experiences from the experient's own viewpoint' (p.13, own emphasis). White (1996) even identifies these types of pluralistic strategies as 'feminist standpoint' ones. Nevertheless, there has been little emphasis on the *danger* of conceiving the issues in an essentially divisive manner (i.e., by focusing on issues that question scientific validity). This danger is not only political; the danger has *practical* consequences. I will end by briefly listing some examples of the dangers below.

Firstly, it is because there is a conceptual divide between what I have termed as experimental and experiential approaches that parapsychologists seem to have the impression that their field is 'something special'. For example, McConnell's belief that 'it is the seemingly hopeless difficulty of the parapsychological challenge that is keeping professional scientists away from the field' (McConnell, 1975, p.275) and Gauger's comment about parapsychology being at the cutting point between the sciences and the humanities both point towards parapsychology as being 'especially difficult' or challenging. It may be tempt-

ing to think that because psi is especially elusive parapsychology has this dilemma over which direction to pursue. Of course, anyone involved in studying any subject will regard their field as 'special' and it is even desirable that this is the way that they should think. However, as Banaji and Crowder (1991) note: 'The notion that human behaviour is vastly more complex than chemical reactions can only emerge from a lack of acquaintance with other sciences' (p.79). One need not — or should not — draw the conclusion from the alleged 'particular difficulty' of doing parapsychology that the field as an academic subject is necessarily in itself more special or difficult than any other field. Nor must one believe that only parapsychology is ambiguously seated at the borderline between disciplines. Some comments from those working in memory research may be sobering in this respect. Conway (1991), for example, writes in relation to memory research that *'it falls to the psychologist* to determine the limits of such methods [i.e., the methods of the physical sciences] when these are applied to people' (own emphasis). Here, then, it is *psychology* that is perceived to be at the cutting point between two fields of inquiry (human sciences and physical sciences). Ceci and Bronfenbrenner (1991) ask of the subject matter of memory: 'What if the essence of what is being studied is variable and systematically differentiated by the ecology in which it unfolds?' (p.30). This citation shows how 'especially difficult' memory research is. Both of these comments, one feels, could have been written by parapsychologists about their field. If one sees the problems of parapsychology in a broader, more unified context, one can also see that parapsychology is not facing its problems alone.

Secondly, the conceptual divide over the direction in which parapsychology should proceed encourages parapsychologists to think that parapsychology is still finding its feet and is a young discipline from which too much cannot yet be demanded. Perhaps, then, it is somewhat disillusioning to read Morton's comment about the current status of experimental work in memory research. He writes: 'Whenever I see psychology described as 'our young endeavour' I know I am in the presence of a losing argument. Viewed from where most of the scientific action is at the moment, 100 years and more is aged indeed' (Morton, 1991, p.32). This comment could have been directed at parapsychology merely by adding four extra letters ("para") to the fourth word in the first sentence. The standard reply, of course, would be that parapsychology cannot be expected to have progressed very far because there are so few active researchers. However, I am reminded here of Braude's contention that micro-PK is what is found because it is only (laboratory) evidence for micro-PK that is considered to be valid (Braude, 1991). The standard "so few researchers" reply may well be fine to stave off the skeptics, but if one's *true* attitude is that one cannot expect much from parapsychology after 100 years, it is a depressing testimony to the way in which parapsychology limits itself methodologically and conceptually (and, presumably, in the questions it has deemed important to ask).

Thirdly, conceptualizing methodologies in ways that encourage two extremes will inevitably result in an attempt to argue for one method over another. This political struggle, however, only limits parapsychology. Limiting and arguing over the 'correct' areas of inquiry is simply a case of limiting the possible results. In memory research the findings of the experimental and naturalistic approaches are frequently compared and fed into each other. As Winograd writes: 'There are two possibilities in comparing across the two domains, one being convergence and the other divergence. When there is a divergence... we clearly have learned something new... When there is convergence, our confidence in the empirical basis of our science increases. Either way, we have made progress' (Winograd, 1994, p.292). The danger of conceptualizing a divide in parapsychology is that no progress will be made at all.

Fourthly, the divide so conceived encourages people in the field to think that

there is an issue about whether or not parapsychology should be a science. Because the debate is conceived in this either-or manner, the issues turn into an argument about what parapsychology is or should be. Such a discussion is, however, a purely internal one. To this extent the divide drives parapsychology back further into itself. Parapsychology discusses itself and itself alone and thereby distances itself ever further from the mainstream (Cf Stevenson, 1988).

Finally, the divide, by emphasizing two extremes, detracts attention away from the possibility of following 'middle' paths. It is, in a way, astonishing that Sheldrake's work — which is probably the closest analogue to 'naturalistic research methods' in parapsychology — is rarely, if ever, brought into the 'experimentation versus experience' debate. Sheldrake (1994) focuses on apparent everyday experiences of psi — such as the feeling of being looked at and the phenomenon of pets awaiting their owner's arrival — in their natural setting. Unlike in memory research, there has been little published discussion in parapsychology about issues of control and rigour in this sort of set-up. There has also been remarkably little effort to explore ways in which psi might be operative more commonly than one may be inclined to believe. Indeed there has been remarkably little work of this 'naturalistic' kind at all (but, e.g., see Pratt, 1953; Stanford, 1990). One may wonder about why this should be, but if one considers the literature in parapsychology one finds that the conceptual issues with which I have concerned myself here focus on the experimental versus non-experimental approaches. Given that there is this extreme conceptual divide, then, it is perhaps not so remarkable after all that parapsychology should almost totally neglect any possibilities that lie in the 'excluded middle'. This can only be detrimental to parapsychology's progress.

My conclusion, therefore — that parapsychology can and should use a variety of methods — is neither particularly stunning nor particularly new. Morris (1982) too has advocated the "development of new methodologies", so the idea of an additional (or reinstated) "middle path" is not in itself new either. However, what I regard as the importance of this paper is (a) that I have shown that the conception of the "experimentation versus experience" debate in parapsychology emphasizes two extremes and that this extremity is to parapsychology's detriment (b) that there are many competing notions of validity to be untangled in the debate (c) that there needs to be a clearer idea of parapsychology's leading questions and (d) that insights can be gained into the nature of parapsychology and its direction by comparing debates within parapsychology to those same debates raging in other disciplines. This paper has merely outlined a few of the problems entailed by each of these points. It will have been successful if it encourages people to think more clearly about the issues involved, the questions that they think that *parapsychology* needs to solve (rather than, for example, merely what a given individual happens to find interesting or what is merely provoked by an unexpected experimental result) and if it promotes greater cross-fertilization with similar arguments and results in other disciplines.

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Experimenteren of ervaren? Een kwestie van validiteit

Samenvatting: In de parapsychologie vinden nogal wat thematische discussies plaats. Dit artikel legt de nadruk op de vraag of parapsychologie zich moet richten op experimentele methoden, dan wel op puur ervaringsgebonden benaderingen (d.w.z. die zich niet bekommeren om de validiteit van de psi-hypothese). Ik vergelijk en contrasteer aspecten van deze tweestrijd met de in geheugenonderzoek aanwezige controverse tussen een experimentele en een ervaringsgerichte aanpak. In de parapsychologie worden onderwerpen zo benaderd dat beide alternatieven in de richting gaan van de twee extrema objectiviteit en subjectiviteit.

Deze controverse tussen experiment en ervaring zorgt dat de vraag of parapsychologie een wetenschap moet zijn überhaupt wordt opgeworpen. De eigenlijke reden voor de hele discussie is dat we ons niet bezighouden met de exacte aard van de cruciale vragen in de parapsychologie. Volgens mij moet de parapsycholoog verschillende benaderingen gebruiken en kan een nader onderzoek van enkele vragen die ik stel bij validiteit en bij de doelstellingen van de parapsychologie daarbij goed van pas komen.

Experimentieren oder Erfahren? Geltungsfragen

Zusammenfassung: Es gibt eine Reihe themenbezogener Auseinandersetzungen innerhalb der Parapsychologie. Die vorliegende Abhandlung legt ihr Hauptaugenmerk jedoch auf die Kontroverse über die Frage, ob sich die Parapsychologie auf experimentelle Verfahren oder auf rein erfahrungsbezogene Ansätze (d.h., jene, die sich nicht mit der Geltung der Psi-Hypothese befassen) konzentrieren sollte. Ich stelle die in dieser speziellen Debatte aufgeworfenen Fragen der in der Erinnerungs-Forschung entstandenen Kontroverse über die Frage gegenüber, ob man sich dort auf experimentelle Methoden oder naturalistische Ansätze konzentrieren sollte. Ich versuche zu zeigen, daß die in der Parapsychologie diskutierten Fragen so gefaßt sind, daß die beiden Alternativen auf zwei Extrempositionen von Subjektivität und Objektivität hinauslaufen. Es ist eben dieser Kontroverse von Experiment vs. Erfahrung geschuldet, daß sich die Frage, ob die Parapsychologie eine Wissenschaft sein soll, überhaupt stellt. Letztlich liegt der ganzen Auseinandersetzung das Versäumnis zugrunde, sich über die Art der eigentlichen Leitfragen der Parapsychologie zu verständigen. Ich komme zu dem Schluß, daß die Parapsychologie vielfältige Methoden verwenden sollte und daß sich eine eingehendere Beschäftigung mit den hier auftretenden Fragen bezüglich Geltungsgründen und den Zielen der Parapsychologie als hilfreich erweisen könnte.

Expérimentation ou Expérience? Questions sur la Validité.

Résumé : Il y a un nombre de débats reliés en parapsychologie, mais le point central de cet article est la controverse pour savoir si la parapsycholgie devrait se centrer sur les méthodes expérimentales ou sur des approches purement expérientielles (c'est-à-dire, qui ne sont pas concernées par la

validité de l'hypothèse psi). Je compare et contraste des questions dans ce débat particulier avec la controverse sur la recherche en mémoire pour savoir si l'on devrait se centrer sur des méthodes expérimentales ou des approches plus naturalistes. J'argumente que les questions en parapsychologie sont conçues de telle façon que les deux alternatives penchent vers les deux extrêmes de subjectivité et d'objectivité. Ceci est dû à la controverse entre expérimentation et expérience vécue, que la question de savoir si la parapsychologie devrait être une science soulève et qui sous-tend ultimement le débat dans son entier, et qui revient à un échec à répondre à la question de la nature précise des questions princeps de la parapsychologie. Je conclue que la parapsychologie devrait utiliser une variété de méthodes et qu'une investigation plus rapprochée de certaines des questions soulevées par cet article sur la validité et les buts de la parapsychologie peut être bénéfique.

Experimentação ou Experiência? Questões sobre a Validade

Resumo: Há vários debates relatados em Parapsicologia, mas o foco deste artigo é a controvérsin sobre se a Parapsicologia deveria se concentrar em métodos experimentais ou em abordagens puramente experienciais (i.e., aquelas que não estão preocupadas com a validade da hipótese de psi). Comparo e contrasto questões nesse debate em particular com a controvérsia na pesquisa de memória em relação à possibilidade de se concentrar sobre os méthodos experimentais ou abordagens naturalistas. Discuto que as questões em Parapsicologia são concebidas de modo que as duas alternativas inclinam se para dois extremos de subjetividade e objetividade. É por causa da controvérsia entre experimentação ou expêriencia que a questão sobre se a Parapsicologia deveria ser uma ciência se levanta a todo momento e que essencialmente subjaz a todo o debate é a falha em leventar a questão da natureza precisa das questões principais du Parapsicologia. Concluo que a Parapsicologia deveria utilizar vários métodos e que uma investigação mais próxima de algumas das questões que são levantadas sobre a validade e sobre os propósitos da Parapsicologia poderia ser benéfica.

¿Experimentación o Experiencia? Aspectos sobre la Validez

Resúmen: Hay varios debates de temas en parapsicología pero el énfasis en este trabajo es la controversia sobre si la parapsicología debe concentrarse en métodos experimentales o en acercamientos basados puramente en la experiencia (esto es, aquellos que no se preocupan por la validez de la hipótesis psi). Yo comparo y contrasto aspectos de este debate con la controversia en la investigación de la memoria sobre si se deben enfatizar los métodos experimentales o los acercamientos naturalistas. Propongo que los problemas en parapsicología están conceptualizados de tal forma que las dos alternativas van hacia dos extremos de subjetividad y objetividad. La pregunta de que si la parapsicología es una ciencia o no se debe a la controversia sobre la experimentación y la experiencia. La base de este debate es que no se ha considerado cual es la naturaleza precisa de las preguntas principales de la parapsicología. Yo concluyo que la parapsicología debía de usar una variedad de métodos y que una investigación más detallada de algunos de los problemas discutidos en el artículo sobre la validez y propósitos de la parapsicología sería beneficiosa.

Sperimentazione o esperienza? Questioni di validità

Sommario: In parapsicologia vi sono diversi dibattiti tra loro correlati, ma argomento di questo lavoro è la controversia se la parapsicologia debba incentrarsi sui metodi sperimentali o solo su approcci puramente esperienziali (quelli, cioè, che non si occupano della validità dell'ipotesi della psi). Nella discussione alcuni temi di questo particolare dibattito vengono confrontati e contrapposti alla controversia che perdura nelle ricerche sulla memoria, relativamente alla possibilità di concentrarsi sui metodi sperimentali o sugli approcci naturalistici. Si suggerisce che le questioni parapsi-

cologiche sono concepite in maniera tale che le due alternative tendono verso gli estremi della soggettività e dell'oggettività. E' dalla contrapposizione tra sperimentazione ed esperienza che nasce il dilemma se la parapsicologia sia una scienza o meno e ciò che in definitiva sottostà all'intero dibattito è l'incapacità di affrontare il problema della natura precisa degli interrogativi principali della parapsicologia. Si conclude affermando che la parapsicologia dovrebbe far ricorso a una gamma di metodi diversi e che potrebbe essere utile un esame più approfondito di alcuni dei temi toccati in questo articolo sulla validità e sugli scopi della parapsicologia.

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Exploring the Features of Spontaneous Psychic Experiences

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Abstract: There is much research left to do in the study of the features of psi experiences. This includes assessing the incidence and range of particular features such as the theme and symbolism of ESP experiences as well as studying features of neglected phenomena such as auras and non-recurrent PK effects. In addition, I discuss ways in which interrelationships between the features can be examined. This includes examining the relationship between (i) dreams (mode of experience) and precognitive experiences (ii) the topic of ESP and the amount of detail in the experience, and (iii) the relationship of veridical elements to the rest of the components of the experiences. Finally, the possible effects that factors such as psychological variables, modes of induction and specific features of the experiences themselves may have on the content of the experience is considered. It is argued that attention to the features of parapsychological experiences will (i) give us a better descriptive sense of psi experiences, (ii) help us to assess empirically claims from folklore and experiential traditions, (iii) increase our understanding of the relationship of particular features and variables with the experience's content, (iv) allow us to develop theoretical models and predictions, (v) help us to address issues such as the possibility that we may be dealing with different phenomena even if surface similarities exist, and (vi) be important for the issue of a differential diagnosis between ESP and delusional experiences.

The exploration of features of psychic phenomena has been of interest since the beginnings of psychical research. Early classics such as *Phantasms of the Living* (Gurney, Myers, & Podmore, 1886), the 'Census of Hallucinations' (Sidgwick, Johnson, Myers, Podmore, & Sidgwick, 1894), and the later work of other pioneers (e.g., Bozzano, 1907) are evidence of this. The features of psi experiences vary according to the claims in question and are not limited to their veridicality. For apparitions, we may talk about how solid or transparent the figure is, how it moves, whether or not it attempts to communicate or engages in seemingly intelligent actions, whether or not it is seen to pass through walls, and what emotional and physical sensations are evoked in the experiencers. For OBEs, we may pay attention to reports of seeing the physical body, travelling to distant locations, or perceiving oneself in a body similar to the physical one. Among the features of ESP experiences that have generally been studied are the type and form of the experience, feelings of conviction, vividness, the meaning of the experience, its theme, and number of details. Irwin (1994) recently reviewed a good part of this literature in the seventh volume of *Advances in Parapsychological Research*. But regardless of the work he discusses I would argue that psychical research has only scratched the surface in the study of the features of parapsychological experiences. In what follows, I will discuss some specific areas and approaches to this problem that deserve further study.

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Incidence and Range of Features

Notwithstanding the long history of the interest in features of spontaneous phenomena, the topic has not generally received systematic attention from parapsychologists as a whole. For example, although much has been written about the features of apparitions (e.g., Green & McCreery, 1975; Haraldsson, 1988-1989) we still need to conduct more studies to develop a more reliable profile of characteristics. A problem here is that not all the studies ask the same questions nor probe for similar features, so that the existing data often lack the information necessary to perform analyses. Consequently we tend to over generalize, drawing conclusions that are not fully supported empirically. In addition, we find it difficult to compare qualitative and quantitative studies because of the lack of a common vocabulary. These problems were evident to me as I reviewed the literature on the features of OBEs (Alvarado, 1986) and on haunting apparitions (Alvarado & Zingrone, 1995a).

Nonetheless by combining some studies, there is enough data to support some generalizations. For example, from the days of *Phantasms of the Living* to those of the later case collections of Flammarion (1920-1922 / 1922-1923), Stevenson (1970b) and Piccinini and Rinaldi (1990; Rinaldi & Piccinini, n.d.), death has been a prominent theme in ESP experiences. Stevenson (1970b, p.2) summarizes the results of five case collections conducted in England, Germany, India and the United States that support the importance of death as a theme in ESP manifestations. Other generalizations we may make are the following: that ESP experiences are usually related to the fortunes of human beings and less to material incidents; that ESP experiences appear to involve a variety of sensory modalities, and occur in such forms as dreams, hallucinations and intuitions; and that ESP experiences convey only a few specific details to the percipient (e.g., Green, 1960; Rhine, 1981; Schouten, 1979, 1981, 1982; Stevenson, 1970b).

While most of the work has focused on ESP as it occurs in dreams, intuitions and hallucinations, other phenomena have barely received attention at all. An example is auras. Although much has been written in the popular, occult and experiential literature about the colour and meaning of auras (e.g., Karagulla, 1967), practically no systematic work has been carried out to map the features of this phenomenon. A colleague and I recently published a questionnaire designed to explore such aspects of auras as color, movement, distance from the body, and shape, among other features. We hope this questionnaire will guide future investigations into the features of this neglected phenomenon (Alvarado & Zingrone, 1994).

Non-recurrent PK (such as the stopping of clocks or the movement of objects that seems to coincide with death) is an example of another phenomenon about which we know little, even though the pioneering work of Bozzano (1923), Rhine (1963), and Piccinini and Rinaldi (1990; Rinaldi & Piccinini, n.d.) has addressed the issue. In the latter, for example, the authors reported that, out of 67 death-related cases, physical effects were reported to occurr in relation to clocks (33%), hanging objects such as pictures (30%), the opening or moving of doors (18%), falling of standing objects (12%), and other effects (7%) (Rinaldi & Piccininni, n.d.).

Although the case collection studies of poltergeists conducted by Biondi and Caratelli (1992), Huesmann and Schriever (1989), Gauld (Gauld & Cornell, 1979), and Roll (1977) have revealed much about features of these cases there is still room for expansion. We could focus on those poltergeist cases in which specific phenomena predominate. In-depth case studies that describe particular phenomena such as stone throwing, apparitions, noises, and fires might change the focus from the general description of many events to a more detailed 'profile' of specific features. In the case of raps or knocks, for example, we might focus on their intensity, range, the places in which they occur, whether they are heard singly or collectively, if they

seem to show intelligence, if they move from place to place or, instead, focus on specific locations.

Particular Features of Phenomena

By studying individual features of parapsychological phenomena we may also be able to do much to confirm observations that were previously, but not consistently, reported in the literature. One lead we may follow is the observations of Stevenson (1970a, 1992) and others (e.g., Palmer, 1979) that some ESP dreams are considered by the experients to be more vivid that non-ESP ones. We might take ideas from folklore, as seen in beliefs about apparitions, omens, second sight, and many other terms and phenomena prevalent in many traditions.

A particularly rich source of ideas can be found in the experiential and occult literature on astral projection, for example. Sylvan Muldoon's account of his own OBEs in his classic book, *The Projection of the Astral Body* (Muldoon & Carrington, 1929), gives the impression that the so-called silver or astral cord is a common feature of the experience. But a review of available studies on the subject show that this feature is nowhere near as common as Muldoon leads us to believe (Alvarado, 1986). More recently, Nancy Zingrone and I found evidence consistent with Muldoon's belief that rapid return to the body is associated with a sensation of shock, what Muldoon referred to as repercussion (Alvarado & Zingrone, 1995b). Work that begins with experiences and beliefs of folk and occult traditions can ultimately serve to demystify some beliefs or to offer support for others.

Symbolic Nature of Phenomena

A variety of studies have addressed the form in which ESP manifests, but most have ignored other possible forms of experience such as somatic ones. An exception to this is L.E. Rhine's (1967) study, summarized in Table 1. In addition, little work has attempted to tackle the problem of symbolic imagery in ESP experiences.

Bozzano (1907) discussed some symbols in general, and Marabini (1957) focused on them from the point of view of the psychology of a single individual. But much more remains to be done on the emergence of psi information, from both an idiographic and nomothetic perspective. For example, are some symbols consistent and particular to specific individuals (e.g., Dommeyer, 1955)? Can their appearance be generalized to the experiences of other individuals? If the experiences are specific to an individual, is it possible to study the life experiences of that individual to try to find the underlying incidents that created the associations and meanings that may have led to the formation and frequent use of such symbols? Stevenson (1963, 1992; Heywood & Stevenson, 1966) has reported cases in which premonitions experienced by some individuals were related to issues relevant to them based on their previous experiences.

Single Case Studies

Current spontaneous case research emphasizes issues of generalization and constancy of findings or lack thereof, across groups and across studies. This emphasis is in line with the attempts of modern behavioral science to understand human beings in their generalities. But one should not ignore the great potential of single case studies to discern the operation of individual psychic functioning. After all, each human being is an exception to the norms science has established in one way or another. Bender's (1966) study of a single precognitive dreamer makes a good case for the influence of life experiences and motivations on the topics featured in the ESP content of the precognitive dream. There is much more we could do to understand those experiences and we would be in a better position to offer advice to experiencers if more attention was paid to their 'psi-individuality.' Any clinician or counsellor can attest to the importance of understanding an individual's unique situation

Table 1
Cases of somatic ESP studied by L.E. Rhine (1967)

Form	Percentage
Localized Pain (N = 120)	71
Part of body:	
Head	21
Limbs	20
Upper body	30
Localized	47
Breathing difficulties	53
Lower body	29
Labour pains	31
Pain in abdomen	23
Backache	23
Cramps	8
Stomach pains	6
Side pains	3
No description	6
General Illness (N = 14)	8
Other Physiological Effects (N = 35)	21
Feeling of falling	17
Overt reaction (e.g., cried, dazed)	11
Heart beat, trembling, paleness	11
Paralysis, numbness	9
Other	51

in order to make sense of their concerns, symptoms or existential dilemmas.This work is important — one may say, essential — even if it cannot be generalized entirely. In addition, we may find psi-individuality can, on occasion, provide clues to more general forms and dynamics of human functioning. So, while a particular symbol, or cluster of them, may be consistent and meaningful only to one individual, by aggregating the case studies of single experiencers, we may eventually begin to understand how such symbols are formed in general. Symbols need not be universal to be informative and generalizable regarding their construction and dynamics.

Qualitative Studies

Similarly, we may argue for the importance of qualitative studies as a complement to the current emphasis on quantification. The qualitative perspective can illuminate such issues as the type of symbols and variety of emotions, imagery and other factors associated with psychic experiences. This approach is sensitive to the intricacies of the phenomenon in that it allows us to tap into the flow of experience, to study its features directly, and to relate it to aspects of the individual's life and social context. As a consequence of such research, we may find ourselves in a position to study how features vary within and between experiences. Examples of this include Gurney's discussion of the devel-

opment of telepathic hallucinations with descriptions of apparitional manifestations of various degrees of organisation (Gurney, Myers, & Podmore, 1886). Stevenson's (1963, 1970b) observations of the imagery prevalent in some spontaneous ESP cases and Bozzano's studies of death-bed visions (1923) and hauntings (1919/1925) based on the description and comparison of specific features of the phenomena such as veridical visions and visual apparitions, respectively, provide other examples of this type of study.

Of course, I am not arguing here for opposing viewpoints or approaches whether idiographic vs. nomothetic or qualitative vs. quantitative. My point is that there is a need to combine both more than has been done in the past while at the same time realizing that each approach has particular advantages and disadvantages. For example, while in the long run quantification is essential to generalize our findings, it is necessary to pay attention to the qualitative to obtain information that may be lost or obscured if we limit ourselves to percentages, *p*-values, and effect sizes. Similar arguments may be offered regarding the idiographic-nomothetic approach.

Interrelationship of Inner Features and Other Variables

Another useful approach to this problem is the study of interrelationship of features of parapsychological experiences. Stevenson's work with precognitive dreams mentioned above is an example of this. Perhaps no one is better known for this approach than Louisa E. Rhine (e.g., 1954, 1963, 1967; for a review see Rhine, 1981). In her studies she found that the form of ESP interacted both with completeness of information as well as with feelings of conviction. Dreams provided a higher rate of conviction than waking experiences. Among those experiences with conviction, intuitive cases were more frequent than dreams. The sense of conviction was also found to be more frequent with cases that conveyed incomplete information and most incomplete cases were intuitions. In addition, in one study Rhine (1954) argued that dreams are more frequently the form of expression of precognitive experiences than of contemporary ESP experiences. Sixty-eight percent of precognitive experiences occurred during dreams, as compared to 35% of contemporary experiences. My analysis of this data shows that these differences are statistically significant ($\chi^2(1) = 364.0$, $p < .0000001$, $Phi = .33$).

Sybo Schouten's work also illustrates the usefulness of this approach. In three studies of ESP experiences Schouten (1979, 1981, 1982) found that percipients of intuition cases had a significantly higher tendency to take action than percipients whose experiences took other forms. The same studies showed that cases with non-serious themes had more details than death-related cases. The latter finding was replicated in an independent study (Rinaldi & Piccinini n.d.). It is important to note that, not only are all these studies of the themes of the experiences independently significant, but the effect sizes of these findings are also comparable in the studies for which enough information was given to calculate effect sizes (Schouten's). That is, Schouten's findings concerning this variable were associated with Cramer's Coefficients of .40 (Schouten 1979), .41 (Schouten 1981), and .35 (Schouten 1982), respectively. The mean coefficient was .39. One hopes that the comparison of future quantitative analyses such as Schouten's are expanded beyond assessments of significant *p* values. The comparison of effect sizes can tell us more about the consistency and magnitude of our studies than just listing confirmatory studies.

Other analyses of the interrelationship of features include Green's (1960) study of different types of ESP and Stevenson's (1970b) study of telepathic impressions.

A feature of particular interest to parapsychologists is veridicality. But little research has been done to see how veridicality modifies the rest of the content of the experience. For example, in all the studies of spontaneous OBEs with veridical elements (Alvarado, 1983), no one has tested the notion that the structure or the

phenomenological content of the experience may vary in any way as a function of the presence or absence of veridical observations. Similar notions could be tested with apparitional cases in which veridical information is conveyed or in which apparitions are perceived collectively. Green (1960) examined veridicality — assessed by reading case reports — in relation to such variables as the content of the experience, conviction, and type of ESP. Schriever (1987) contrasted those precognitive dreams reported by a single individual considered to be 'well-matched' to later events to those considered to be 'badly-matched.' The contrasts included such aspects as positive and negative affect, emotional significance, vividness, and liveliness, among others. Only one comparison was significant. A higher proportion of well-matched dreams had realistic dream images (88%) as opposed to the badly-matched dreams (60%).

A variant of this approach is the comparison of cases in terms of such variables as quality and detail of testimony (Alvarado & Zingrone, 1995a; Gauld & Cornell, 1979), ratings of evidentiality (Hart & Collaborators, 1956), and first and second hand cases (Schouten, 1979; Piccinini & Rinaldi, 1990).

Predictive Approaches

In her recent review paper Watt (1994) has reminded us of the importance of making informal or formal predictions in our work with spontaneous cases. A more prediction-oriented exploration of features of parapsychological experiences is necessary to prevent our work from becoming a mere collection of strange occurrences. Such prediction - driven studies will allow us to integrate our findings more effectively with more established knowledge. In the past, the idea of survival of bodily death has inspired much research and more speculation. The classic studies of Sidgwick (1885) and Bozzano (1919/1925) as well as the recent work of myself and a colleague (Alvarado & Zingrone, 1995a) are examples of this. On the other hand, Schouten has attempted to test more naturalistic predictions. For example, in his three studies Schouten (1979, 1981, 1982) tested for a possible explanation to account for the higher frequency of females over males in many case collections. Perhaps women are more sensitive than men to ESP. Schouten noted: 'If females are more sensitive one would expect that they are able to 'see' more details, or to cover larger distances. However, none of these analyses yielded a significant difference between female and male percipients ... ' (Schouten 1983, p.330).

Cross-Cultural Comparisons

The issue of identifying variables that affect the features of psi experiences has important implications for our understanding of these experiences, because a more complete understanding of them will allow us to test particular predictions and explanatory models. For example, it has been argued that culture or beliefs can shape the way psychic phenomena manifest. A more sensitive and interesting measure of this, beyond the usual comparison of reports of basic experiences (e.g., the percentage of reports of dream ESP, or apparitions), would be the systematic comparison of features of experiences collected from different cultures. When I compared two surveys done in India (Chadha, Sahni, & Alvarado, 1987) and in the United States (Palmer, 1979) I found interesting differences that would have been missed if only the incidence of the basic experience were analyzed. Table 2 presents comparisons of OBE features from both studies, showing some differences. Another analysis focused on claims to remember previous lives (Table 3). These comparisons reveal some interesting differences between specific features that may reflect the

Table 2
Comparison of percentage OBE features from India and from the United States

Item	Indian Students (N = 270)	US Students (N = 268)	χ^2	*p*	*Phi*
OBEs	11	25	16.3	.01	.17
More than one	64	82	4.03	.10	.20
Saw physical body	57	62	.32	.99	.06
Travelled	57	27	7.98	.005	.29
ESP	71	12	33.33	.000002	.59
Seen as apparition	43	9	15.55	.0002	.40
Produce at will	57	22	11.01	.002	.34

Note: This data is taken from Chadha, Sahni and Alvarado (1987) and from Palmer's (1979) student sample.

Table 3
Claims of past-life memories among Indian and American college students

Item	India (N = 270)	US (N = 268)
Past-Life Memories	7%	9%
More than one experience	100%	87%
Dream	44%	68%
More than one lifetime	67%	32%*
Famous person	56%	43%
Recalled details	33%	27%
Verified details	33%	5%**

Note: This data is taken from Chadha, Sahni and Alvarado (1987) and from Palmer's (1979) student sample.
* $p = .05$ ** $p = .04$ (Fisher's Exact *P*, 2-t)

cultural milieu in which experiencers live, but that would be missed if we focused only on the incidence of the experience without attention to its content. Although the incidence of the basic claim is similar in both countries, the analysis shows higher percentages in most of the specific features in the Indian cases. Among these, the differences between incidence of claims to remember more than one life and claims to have verified the details of the experience are significant. Because belief in reincarnation is higher in India than in the States it is possible that Indian experiencers are more disposed to take their experiences seriously and thus attempt to verify their memories more often than those experiencers living in the States. Belief may also moderate or mediate the process of obtaining veridical memories and/or the creation of fantasies

about previous lives, and thus affect features such as frequency of lives remembered. Stevenson's (1983, p.9) calculation of the median interval in months between death and rebirth in his cases of the reincarnation type across seven cultures also suggests that beliefs help shape some of the features of the cases.

Psychological Variables

More models of parapsychological experiences could be developed if we related psychological variables to experience features. Irwin has conducted important research along these lines. In a study of ESP he found that a visual coding style was related to the incidence of visual experiences (Irwin, 1979), while his studies of OBEs have related absorption to specific OBE features such as reports of a parasomatic body (Irwin, 1985). Following this line of research we may ask whether higher absorption, dissociation or fantasy proneness scores correlate to specific features, the overall number of features, the ability of an experiencer to have multiple experiences or to control the experience at will. For example, do individuals high on dissociation and fantasy proneness have more complex apparitional sightings? Maybe individuals high on these measures more frequently experience OBEs with 'exotic' features, such as travelling to other dimensions and encountering entities. Many other variables deserve exploration as well, such as demographic, social, cultural and medical ones.

Empirically-Created Typologies

If we study experience features we may be able empirically to create taxonomies or typologies of experiences. We might focus on studies that compare the features of psychic phenomena obtained in different contexts or grouped according to a variety of variables. Hornell Hart's (& Collaborators, 1956) comparison of the characteristics of conscious apparitions of the living to those of the dying and of the dead is an example of this approach, as are the comparisons made by Emily Cook and her colleagues of solved and unsolved reincarnation-type cases (Cook, Pasricha, Samararatne, Maung, & Stevenson, 1983). I studied the features of OBEs in relation to natural and enforced circumstances in which the experience occurred and found no significant differences (Alvarado, 1984). In addition, in a study of hauntings with Nancy Zingrone we found that haunting cases with apparitions had a higher mean number of features than did a group of haunting cases without apparitions (Alvarado & Zingrone, 1995a). The finding suggested to us that the presence of apparitions affects the complexity of content of haunting cases, or at least seems to be an important factor shaping the cases.

The issue of typologies can be further explored through statistical techniques such as cluster analysis. Gauld (Gauld & Cornell, 1979) conducted such an analysis with hauntings and poltergeists as did Greyson (1985) with NDE cases. But techniques such as these are rarely used in parapsychological research. Research along these lines could play an important role in increasing our knowledge of the typology of psychic phenomena empirically rather than, as is usually done in parapsychology, subjectively and impressionistically.

Concluding Remarks

While I have pointed out in this paper that some work has been conducted regarding the study of the features of parapsychological experiences, the problem is that the amount of work conducted is not enough to obtain a clear understanding of our phenomena. Regardless of the important contributions of Bender, Schouten, Rhine and Stevenson, among others, their work remains isolated and in need of expansion and replication. The lack of studies of this sort may be explained in different ways. In some time periods research with spontaneous cases in general has been neglected. Sometimes researchers have been mainly or overly concerned with evidential considerations instead of phenomenological ones. But regardless of the

explanations the fact is that we need to continue to expand on previous work to increase our understanding of these phenomena.

Of course, it is possible that many of the proposed interactions will not be significant, that psychological (or other variables) are not determining factors or that they contribute little to the configuration of the features of the experiences. Instead, these variables may be related to the incidence of the experience itself regardless of its content. In addition, the fact that some apparitions, OBEs and other experiences have a veridical component does not mean that veridicality will necessarily interact with the rest of the features. Using the concept that such ESP mediating vehicles as dreams, intuitions and hallucinations are normal psychological phenomena (e.g., Tyrrell, 1946), for example, it may be possible to conceptualize ESP as a factor that is modified by the mediating vehicle, rather than the other way around. Such a finding would be consistent with studies that show that precognition occurs more frequently in dreams than in other forms of the experience (Rhine, 1954), and that intuition is associated more often with attempts to act on the content of the experience than in hallucinations and dreams (Schouten, 1979, 1981, 1982).

In other words, significant interactions may be found where they are unexpected. The inter-variable relations may be more complex than the examples we have discussed here. Consequently, future studies might use path analysis involving multiple variables, and taking the magnitude of the variables' influence into account (e.g., Hoyle & Smith, 1994).

The work discussed in this paper is important to psychology and to parapsychology for many reasons. These include:

1. *Having a better descriptive sense of the features of psi experiences and their incidence.* The first step in understanding is to describe more clearly the phenomena we study. Such a fine-grained description is a necessary first step towards a meaningful comparison of differing findings. In addition, we may be able to ask questions about the development of features and features-relationships both within and between experiences, thus addressing the issue of the variability.

2. *Assessing popular, experiential and occult ideas about psychic phenomena.* By having more specific understanding of experiences we may be able to evaluate a wide variety of beliefs and to obtain knowledge relevant to experiencers' concerns. These ideas may include the meaning of the experience and its association with a variety of philosophies that have been formed over time around the phenomena.

3. *Understanding the relationship of particular features with each other and to other variables such as psychological variables.* By placing the experience and its features within a psychological context, individually, developmentally and socially, we may be able to develop typologies that have real explanatory and predictive power.

4. *Understanding the phenomena in the context of specific models as opposed to amassing and maintaining collections of interesting, but ambiguous or meaningless relationships.* As argued by Blackmore (1993) with NDEs, by Irwin (1985) with OBEs, and by Schouten (1979) with ESP, the features of experiences can guide progressive research programs based on specific assumptions and predictions, eventually allowing us to integrate spontaneous cases into conventional psychological knowledge. That is, into 'normal' science rather than mantaining spontaneous experiences as a kind of permanent anomaly.

5. *Realizing that some of our experiences may not represent a unitary phenomenon, but that phenomena may have differential causal mechanisms, although surface similarities exist.* For example, Osis (1981) has argued that the cases we classify as apparitions may arise from a variety of different mechanisms. Many if not all parapsychological experiences may also be differentially caused.

6. *Allowing us to differentiate ESP from delusion.* Beginning with Gurney's (Gurney, Myers & Podmore, 1886) writings and continuing to more recent discussions

in the literature (e.g., Coly & McMahon, 1993; Marabini, 1992; West, 1960), there has always been a need to sort out 'real' phenomena from delusion. However, such differentiation has never been addressed systematically nor through specific studies. One way to do this would be to compare a group of, say, veridical auditory hallucinations to auditory hallucinations collected from a group of schizophrenics. Do both groups differ from each other in terms of content, topic and type of auditory stimuli? In addition we could look into other features (e.g. duration, source of information) and into feature clusters. All these factors could also be studied in relation to possible differences between the groups on variables such as developmental issues and the life context of the experiencers.

The study of the features of parapsychological experiences is an open field. Further work in this area can do no less than deepen and broaden spontaneous case research bringing us finally to the day when we can make definitive sense of the experiences that astound, puzzle and frighten millions of people around the world.

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Onderzoek naar kenmerken van paranormale ervaringen

Samenvatting: Er is nog veel onderzoek nodig naar de kenmerken van spontane paranormale ervaringen. Daartoe behoort niet alleen een inschatting van het aantal en het bereik van zaken als het onderwerp en de symboliek van ESP-ervaringen, maar ook onderzoek naar de kenmerken van verwaarloosde verschijnselen als aura's en eenmalige PK-effecten. Ik bespreek ook methoden voor het onderzoeken van interne verbanden tussen de kenmerken, bij voorbeeld de samenhang tussen (I) dromen (soort ervaring) en voorspellingen, (II) het onderwerp van ESP en de mate van detail in een ervaring en (III) tussen later schijnbaar uitkomende elementen en de overige inhoud van een ervaring. Ten slotte behandel ik welke effecten factoren als psychologische variabelen, inductiemethoden en specifieke kenmerken van de ervaringen op zich op de inhoud van zo'n ervaring kunnen hebben. Aandacht voor de kenmerken van paranormale ervaringen stelt ons in staat (I) die ervaringen beter te beschrijven, (II) claims beter empirisch te onderscheiden van folklore en experiëntele tradities, (III) meer begrip te krijgen van het verband tussen bepaalde kenmerken of variabelen en de inhoud van de ervaring, (IV) theoretische modellen en voorspellingen op te stellen, (V) de mogelijkheid te onderkennen dat we met verschillende verschijnselen te maken hebben terwijl ze op het eerste oog veel gelijkenis vertonen en (VI) is tevens belangrijk voor een diagnose over de verschillen tussen ESP en bedrieglijk daarop lijkende ervaringen.

Untersuchung der Merkmale spontaner paranormaler Erfahrungen

Zusammenfassung: Hinsichtlich der Merkmale von Psi-Erfahrungen ist noch viel Forschungsarbeit zu leisten. So besteht weiterhin Klärungsbedarf hinsichtlich der Einschätzung von Häufigkeit und Bandbreite bestimmter Merkmale wie Thema und symbolischer Aussagekraft von ASW-Erfahrungen sowie der Untersuchung von Merkmalen vernachlässigter Erscheinungen wie Auren und spontaner PK-Effekte. Des weiteren diskutiere ich Wege, auf denen Wechselbeziehungen zwischen solchen Merkmalen untersucht werden können. Dies schließt Untersuchungen der Beziehungen zwischen (i) Träumen (Art des Erlebens) und präkognitiven Erfahrungen, (ii) Gegenstand der ASW und Detailvielfalt des Erlebens und (iii) die Beziehung wahrheitsgetreuer mit den übrigen Erlebens-Elementen ein. Schließlich werden die möglichen Auswirkungen betrachtet, die Faktoren wie etwa psychologische Variablen, Induktionsweisen und spezifische Merkmale der Erfahrungen

selbst auf den Inhalt der Erfahrung haben können. Es wird behauptet, daß die Beachtung der Merkmale parapsychologischer Erfahrungen (i) uns bessere Beschreibungsmittel für Psi-Erfahrungen an die Hand gibt, (ii) hilft, Behauptungen aus Folklore und Erlebenstraditionen empirisch zu beurteilen, (iii) unser Verständnis für Beziehungen zwischen bestimmten Erfahrungs-Merkmalen und -Variablen mit den Erfahrungsinhalten erhöht, (iv) uns gestattet, theoretische Modelle und Voraussagen zu entwickeln, (v) uns hilft, Fragen wie die Aufdeckung unterschiedlicher Phänomentypen ungeachtet oberflächlicher Gemeinsamkeiten zu behandeln und (vi) wichtig wird für differentialdiagnostische Unterscheidungen zwischen ASW und trügerischen Erfahrungen.

Explorer les Caractéristiques des Expériences Psychiques Spontanées

Résumé : Il y a encore beaucoup de recherche à faire sur l'étude des caractéristiques des expériences psi. Ceci inclut une évaluation de l'incidence et de la gamme de caractéristiques particulières comme le thème et le symbolisme des expériences ESP aussi bien que l'étude des caractéristiques de phénomènes négligés tels que les auras et les effets PK non-récurrents. De plus, je discute des façons par lesquelles les inter-relations entre caractéristiques peuvent être examinées. Ceci inclut l'examen des relations entre (i) les rêves (mode d'expérience) et les expériences précognitives (ii) le sujet de l'ESP et la quantité de détails dans l'expérience et (iii) la relation des éléments véridiques avec le reste des composantes des expériences. Finalement, les effets possibles que des facteurs tels que les variables psychologiques, modes d'induction et caractéristiques spécifiques des expériences elles-mêmes peuvent avoir sur le contenu de l'expérience sont pris en considération. On soutient qu'une attention à ces caractéristiques des expériences parapsychologiques (i) nous donnera un meilleur sens descriptif des expériences psi, (ii) aidera à évaluer empiriquement les affirmations des traditions folkloriques et expérientielles, (iii) augmentera notre compréhension de la relation qu'entretiennent des caractéristiques et variables particulières avec le contenu de l'expérience vécue, (iv) nous permettra de développer des modèles et prédictions théoriques, (v) nous aidera à aborder des questions telles que la possibilité que nous puissions avoir affaire à différents phénomènes même si des similarités de surface existent et (vi) sera importante pour la question d'un diagnostic différentiel entre ESP et expériences illusoires.

Explorando as Características das Experiências Psi Espontâneas

Resumo: Há muita pesquisa deixada por fazer no estudo das características das experiências psi. Isto inclui a avaliação da incidência e o espectro de características particulares, come o tema e o simbolismo das experiências de ESP, assim come o estudo das características de fenômenos negligenciados, como auras e efeitos PK não recorrentes. Além disso, discuto caminhos nos quais a inter-relação entre as características podem ser examinadas. Isto inclui a exame das relações entre (I) sonhos (modo de experiência) e experiências precognitivas (ii) o tópico da ESP e a quantidade de detalhes da experiência e (iii) a relação de elementos verídicos com o resto de componentes das experiências. Finalmente, os possíveis efeitos que os fatores como as variáveis psicológicas, modos de inução e características específicas das próprias experiências podem ter no conteúdo da experiência são considerados. Discute-se que a atenção às características das experiências parapsicológicas (I) darão um sentido melhor descrito das experiências psi, (ii) ajudarão a avaliar empiricamente as alegações do folclore e das tradições experiênciais, (iii) aumentarão nossa compreensão da relação de características e variáveis particulares com os conteúdos das experiências, (iv) permitirão que desenvolvamos modelos teóricos e previsões, (v) ajudarão a apontar questões tais como a possibilidadede que possamos estar lidando com fenômenos diferentes mesmo que as semelhanças superficiais existam e (vi) serão importantes para a questão de um diagnóstico diferencial entre ESP e experiêcias ilusórias.

Explorando las Características de las Experiencias Psíquicas Espontáneas

Resúmen: Hay mucho que hacer en el estudio de las características de las experiencias psi. Esto incluye la incidencia y la gama de características tales como el tema y el simbolismo de las experiencias de ESP al igual que el estudio de las características de fenómenos olvidados tales como auras y efectos PK no-recurrentes. En adición, se discuten formas en las cuales la interrelación entre características podría ser examinada. Esto incluye examinar las relaciones entre (i) sueños (modalidad de la experiencia) y experiencias precognitivas, (ii) el tema de la ESP y la cantidad de detalles en la experiencia y (iii) la relación entre elementos verídicos y el resto de los componentes de las experiencias. Finalmente, se consideran los posibles efectos de factores tales como variables psicológicas, formas de inducción y características específicas del fenómeno sobre el contenido de las experiencias. Atención a las características de las experiencias parapsicológicas podría (i) darnos una perspectiva descriptiva mejor de las experiencias psi, (ii) ayudarnos a evaluar empíricamente ideas del folklore y de las tradiciones basadas en la experiencia, (iii) aumentar nuestro entendimiento de la relación entre características y variables específicas con el contenido de la experiencia, (iv) ayudarnos a desarrollar modelos teóricos y predicciones, (v) ayudarnos a enfrentar problemas como la posibilidad de que estemos tratando con diferentes fenómenos aún si éstos tienen similaridades superficiales, y (vi) ser importante para el problema de un diagnóstico diferencial entre la ESP y experiencias delusionales.

L'esplorazione degli aspetti delle esperienze psichiche spontanee

Sommario: Restano ancora da fare numerose ricerche su vari aspetti delle esperienze psi, tra le quali definire l'incidenza e l'ampiezza di particolari caratteristiche come il tema e il simbolismo delle esperienze ESP, e studiare l'aspetto di fenomeni trascurati quali l'aura e gli effetti PK sporadici. Viene discusso inoltre in che modo si possono esaminare i rapporti tra le diverse caratteristiche: come ad esempio analizzare il rapporto tra sogni (modalità dell'esperienza) ed esperienze precognitive, tra contenuto dell'ESP e quantità di dettagli dell'esperienza, tra elementi veritieri e restanti componenti delle esperienze. Infine vengono considerati i possibili effetti che fattori quali le variabili psicologiche, il modo di indurre le esperienze e tratti caratteristici, possono avere sul contenuto dell'esperienza. Si sostiene che prestare attenzione agli aspetti delle esperienze parapsicologiche: (a) fornirà un miglior significato descrittivo alle esperienze psi, (b) aiuterà a valutare empiricamente le segnalazioni provenienti dal folclore e dalle tradizioni, (c) aumenterà la comprensione dei rapporti tra particolari caratteristiche e variabili e contenuto dell'esperienza, (d) consentirà di sviluppare modelli teorici e predizioni, (e) aiuterà ad affrontare questioni quali la possibilità che sotto un aspetto analogo si celino fenomeni differenti, (f) sarà importante ai fini di una diagnosi differenziale tra esperienze ESP ed esperienze illusorie o allucinatorie.

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Survey: Incidence and Social Relevance of Brazilian University Students' Psychic Experiences

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Abstract: The main objective of this paper is to report the incidence and sociological relevance of psychic experiences in the daily lives of Brazilian university students; and to bring to the attention of researchers, especially those in Brazil, the promising opportunity for productive field studies that Brazil offers. The present study comprises the analysis of data obtained from the administration of a 72-item questionnaire, in part translated from Palmer's (1979) 46-item questionnaire, with some adaptations for Brazilian culture. The remainder of the questionnaire is comprised of 27 questions from the Dissociative Experience Scale, developed by Bernstein and Putnam (1986). These questions were also translated and included in the questionnaire to provide data for an analysis to be conducted at a later date. The results were very interesting: 89.5% of the respondents claimed to have experienced at least one psychic experience. Descriptive details of the questionnaire results are presented. In a future paper we intend to analyse all the items of the questionnaire, comparing them to the findings of others. We also intend to extend the study to a quantitatively representative sample of the Brazilian population for further analysis.

Introduction

Several parapsychological surveys have been conducted in the last two decades, among them Blackmore, 1984; Richards, 1990; Haight, 1979; Irwin, 1985, 1985a; Kohr, 1980; Neppe, 1983; Thalbourne, 1981; Thalbourne, 1985 and so on. However, nothing has so far been published in which surveys of the Brazilian population are included. Although it has been said that Brazil is a 'paradise' in terms of the frequency of the occurrence of psychic phenomena — or at least, claims of such occurrences — such a characteristic has not been empirically demonstrated before our study. That is why we feel this survey is very important: nothing like this has been done before in Brazil, neither by the several foreign researchers who have visited and continue to visit Brazil to study Brazilian psychic experiences (e.g., Patrick Geisler, David Hess, Patrice Keane, Stanley Krippner and William Roll) nor by

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Brazilian researchers. Through our study we hope to encourage researchers, especially those in Brazil, to initiate new parapsychological research projects in Brazil.

The objective of this research is to show the analysis on the incidence and importance of psychic phenomena in the daily life of Brazilian university students. This is the first stage of a more complete study because it consists of the analysis of some data gathered from a 72-item questionnaire. We intend to analyze all the items of the questionnaire in the future and amplify the statistical power of the sample so that it becomes a quantitatively representative sample of the Brazilian population in general.

Method

In the present study, 181 questionnaires were administered to students from the Faculdade Anhembi Morumbi (São Paulo, SP, Brazil). The questionnaire itself consisted of 72 items, 45 of which were translated items from Palmer's (1979) questionnaire. The other 27 items, taken from the Dissociative Experience Scale (DES, 1986), were included in the questionnaire for the purpose of an analysis to be conducted at a later date. (As a matter of fact, the DES is composed of 28 items; the one we obtained included only 27. We discovered the error only after the questionnaires were administered. Consequently we could not include the missing item (no. 25) in our questionnaire.)

The questions from the dissociation scale were translated without modification. Some questions from Palmer's questionnaire (2, 11, 36, 41, 42, 43 and 44) were translated and adapted for Brazilian culture. One question (45) was omitted on purpose because it asked whether the respondent knew about the ESP research conducted at the University of Virginia. We will not comment here about the adaptation of some other questions because they were not analysed for this paper.

In this preliminary study, we focused our attention on the answers to questions 1, 3, 11, 18, 19, 20, 21, 22, 24, 26, 27, 28, 29, 30, 34, 35, 39 and 44 because these questions focused on the incidence and the importance of psi experiences in the daily lives of Brazilian university students. We selected questions that were categorized by Palmer as 'IA' and some of those questions categorized by him as 'IB'. The 'IA' category involved 'experiences that, if valid, by definition involve psi, i.e., either ESP or PK.' (Palmer, 1979). These include waking ESP experiences, ESP dreams, being an agent for someone else's ESP experience, and poltergeist activity (RSPK). The 'IB' category involves 'experiences that are not psychic as such, but are of interest to parapsychologists because they might provide a context for either ESP or PK effects' (Palmer, 1979). We included those 'IB' questions that covered out-of-body experiences, apparitions, hauntings and 'memories' of a previous lifetime because in these questions the relationship of these experiences with psi were explicitly explored.

The Sample

Selection of the sample

We decided to administer the questionnaire to the students of Faculdade Anhembi Morumbi because we work as teachers there. One of the coordinators of the Humanities Course obtained promises to cooperate from five teachers. These teachers taught seven classes whose students comprised our respondents. Five of these classes were taught at night and two in the morning. A total of 181 students participated in these classes. We decided not to administer the questionnaire to the classes in which we were teachers so as to minimize any potential influence of our relationships to the respondents.

Characteristics of the respondent students

Among the 181 respondent students, 21 were male and 160 were female. They ranged in age from 18 to 47 years. 62.4%

Table 1
The sample: 181 students of Faculdade Anhembi Morumbi (21 males, 160 females) aged from 18 to 47 years (62.4 % from 18 to 25 years, 37.6 % from 26 to 47 years).

Religion	**%**
a) Protestants	7.0
b) Catholics	61.5
c) 'Umbandistas'	3.5 (from a mediumistic Brazilian religion)
d) Kardecist Spiritists	15.0
e) Jewish	0.0
f) An 'Eastern' Faith	3.0
g) Agnostic or atheist	3.0
h) Others	7.0
Socio-economic status	**%**
a) working class	43.0
b) middle class	36.0
c) upper class	21.0

were between 18 and 25 years old and 37.6% were between 26 and 47 years old. As to religion, 61.5% of the students were Catholics, 15% were Kardecist Spiritists, 7% were Protestants, 3,5% were 'Umbandistas' (from 'Umbanda', a mediumistic Brazilian religion), 3% claimed to have any kind of oriental belief, 3% were agnostic or atheist and 7 % indicated they had other kinds of beliefs (see Table 1).

Procedure

First of all, we obtained permission from the Coordinator of the Faculdade Anhembi Morumbi to administer the questionnaire to the students, if possible, during class time. On March 7, 1994 the questionnaire was administerd to the students during their usual class time, according to the normal class schedules taught by the cooperating teachers.

Before we started to distribute the questionnaire to the students we stressed that they could examine the questionnaire and decide whether or not to answer it. Our intention was to obtain at least 200 completed questionnaires, but of the 214 students that were registered for the courses in question, 11 students chose not to respond and 22 were absent from class. (The students had not been previously informed about plans to administer the questionnaire.) Approximately 95% of the 192 students who were in class completed the questionnaire. We did not invite other students to take part in the survey so as to reach the intended number of 200 because we had decided only to administer the questionnaire in classes for which we had obtained permission. Each student received a questionnaire and an answer sheet on which they could make their answers.

Data scoring and analysis

The respondents' answers were entered from the answer sheets to the Excel 4.0 for Windows spreadsheet for statistical analysis.

Results

Before we present the data obtained in our research, we would like to say that some of our survey results were a surprise

for us in terms of significance. Although it was not our purpose in this paper to compare our data with that from other researchers, we decided to compare our results in this preliminary study to Palmer's research data to demonstrate how high the percentages are and how significant is the difference between Palmer's data and ours. This comparision can be seen in tables 2 and 3. Note that our sampling method differs significantly from Palmer's. These differences complicate the interpretation of the results. Perhaps our sample was not representative of the general population, and this may explain the differences.

Below, we present our results:

Incidence of psi experiences (see Table 2)

Waking ESP experience. Question: 'Have you ever had, while awake, a strong feeling, impression or 'vision' that a previously unexpected event was happening, or was going to happen, and [learned] later that you were right?'

Forty-seven per cent of the respondents reported having had waking ESP experiences. Among these respondents 81% claimed they had more than one of this type of experience; 71% claimed to have received information through hallucinations; tragic events comprised the content of 65% of these experiences; family members were involved in 65% of these experiences; 61% of the respondents who reported this experience had reported it to someone 'before learning of the event by normal means' which makes these cases potentially verifiable; and 83% reported that the event or information occurred within 24 hours before or after the experience.

ESP dreams. Question: 'Have you ever had a rather clear and specific dream which matched in detail an event which occurred before, during or after your dream, and which you did not know or did not expect at the time of the dream?'

The majority of the respondents (64%) reported they had experienced ESP dreams. Among these respondents 92% claimed to have had more than one experience of this kind; 97% reported that the dreams were more vivid than ordinary dreams; the majority of the ESP information obtained in these dreams (71%) was related to tragic events; 75% claimed that the dream information involved family members; 83% claimed that the information given in the dream related to events that occurred within 24 hours before or after the experience, similar to the answers to the waking ESP question; 63% claimed to have told these ESP dreams to someone before learning that the events dreamed about had actually happened.

ESP agency. Question: 'Has any other person ever told you they had a dream, 'vision', or definite feeling in which they seemed to get information about an event involving you which they could not have gotten in any normal or conventional way?'

Sixty-three per cent of the respondents reported they had been the source of ESP information in another's dream, 'vision', or intuition. Among these respondents 98% claimed to have had more than one experience of this kind; 74% said they had felt a strong emotion during the experience; 52% reported they were thinking of the other person during the experience; and 38% reported that the experience involved family members.

RSPK. Question: 'Have you ever seen an object move with no natural or physical means of motion that you could discover?'

Seventeen per cent of our respondents reported such psychokinetic experiences. Among these respondents 75% claimed to have had this experience more than once; and 59% claimed that another person was present during the experience.

Incidence of psi-related experiences

Out-of-body experiences. Question: 'Have you ever had an experience in which you felt that you were located outside of or away from your physical body; that is, the

Table 2
Percentage distribution of respondents claiming psi or psi-related experiences

Item	N = 181	Palmer N = 268	*p*
Waking ESP	47[b]	39[a]	n.s.[a]
More than one	81[a]		
Vision (Hallucination)	71		
Tragic event	65		
Family number	65		
Within 24 hours	83		
Told someone	61		
ESP dreams	64	38	<.0000002
More than one	92		
Especially vivid	97		
Tragic event	71		
Family member	75		
Within 24 hours	83		
Told Someone	63		
ESP agency	63	20	<.0000002
More than one	98		
Emotion	74		
Thinking of percipient	52		
Family member	38		
RSPK (Poltergeist)	17	6	.0003
More than one	75		
Other person present	59		
Out-of-body experiences	31	25	n.s.
More than one	63		
Saw physical body	57		
Travelled	68		
ESP inform. acquired	40		
Seen as apparition	17		
Produce at will	19		
Apparitions	62	17	<.0000002
More than one	91		
Seen	60		
Heard	81		
Touched	57		
Family member	47		
Deceased	35		
ESP inform. acquired	21		
Live in a haunted house	14	8	n.s.
Past-Life Memories	18	9	.008
More than one	72		
Dreams	66		
More than lifetime	27		
Famous person	36		
Recalled details	42		
Verified details	27		

Notes for Table 2.
Sample size varies slightly from question to question due to non-respondents.
[a] Figures in this column refer to the percentage of respondents who claimed the basic experience, not the percentage of the total sample.
[b] Figures in this column refer to the percentage of total experience in the total sample of the Brazilian survey.
[c] Figures in this column refer to the percentage of total experience in the total sample of Palmer's survey.
[d] Figures in this column refer to the probability value of statistical comparisions between Palmer's data and the Brazilian survey.

feeling that your consciousness, mind or centre of awareness was at a different place than your physical body? (If in doubt, please answer 'no'.)'

Thirty-one per cent of the respondents reported out-of-body experiences. Among these respondents 63% claimed they had more than one experience of this kind; 57% saw their own physical body; 68% had the sensation of travelling outside the body; 17% reported they were seen as apparitions during their experiences; and 19% reported they left their bodies on purpose. But the most relevant datum to us was the fact that 40% of these respondents reported that they acquired information, ostensibly by ESP, during their out-of-body experience.

Apparitions. Question: 'Have you ever had, while awake, a vivid impression of seeing, hearing, or being touched by another being which impression, as far as you could discover, was not due to an external physical or natural cause?'

Sixty-two per cent of the respondents reported having had such an experience. Among these respondents 91% reported that they had more than one experience of this kind; 60% reported that they 'saw' something; 81% claimed to have heard something; 57% reported they were touched by something or someone; 47% reported the apparitions seemed to be a member of their family; 35% reported they had an experience with someone who was already dead; 26% reported that other persons were present at the moment of the experience. For the objective of this study, the more important datum to us was the fact that 21% of those who said they had this kind of experience reported they had acquired information about an accident or an unexpected death via the apparition.

Lived in a haunted house. Question: 'Have you ever lived in a house you believed to be haunted?'

Fourteen per cent of our sample answered 'yes'.

Past life memories. Question: 'Have you ever had what seems to be a memory of a previous life (i.e., reincarnation)?'

Eighteen per cent of the respondents reported having had such 'memories'. Among these respondents 72% reported they had more than one experience of this kind; 66% reported that such memories appeared during dreams; 27% claimed to remember more than one lifetime; 36% claimed they 'remembered' lives as famous people in a past life; 42% reported they could recall details of the supposed past life; 27% reported they had verified details and confirmed their accuracy, which makes us consider an ESP hypothesis.

Social significance of psi experience (see Table 3).

Saved crisis. Question: 'Did any of your own experiences you have indicated in this survey 'save' you (or could have saved you) from a serious or tragic event such as illness, severe emotional crisis, accident, or possibly death?'

Twenty-six per cent of the respondents answered 'yes'.

Table 3
Percentage of respondents reporting social significance of psi

Item	N =181	Palmer N = 268	*p*
Saved in crisis			
Saved self	26[a]	7[b]	<.0000002[c]
Saved by someone else	27	5	<.0000002
Saved someone else	18	4	.000002
Changed attitudes			
Self	48	36	.024
Humanity	35	26	n.s.
Society	5	8	n.s.
Spiritual beliefs	58	25	<.0000002
Nature	21	5	n.s.
Life (meaning of)	40	31	n.s.
Death	37	20	.00002
War	6	8	.94
Sex, love	37	18	.000012
Family	45	16	<.0000002
Education	16	8	.014
Business	14	7	.04
Science	3	8	.04
Wealth	20	14	.22
Fame	11	13	.99
Media	8	4	n.s.
Art, leisure, play	40	25	.0018
Other	6	8	.94
Influenced decisions			
Friends	42	15	.000002
School	44	13	<.0000002
Military	3	2	.99
Job	20	5	.000
Vacation	13	6	.014
Moving	18	3	.0000002
Politics	2	1	n.s.
Religious denomination	20	12	.04
Marriage	21	6	.000004
Children (whether to have)	18	1	<.0000002
Naming child	7	1	.0012
Home	8	2	.0024
Car or appliance	8	2	.0024
Health	21	8	.0001
Lifestyle	49	26	.000002
Other	7	4	n.s.

Notes for Table 3. Sample size varies from question to question due to non-respondents.

[a] Figures in this column refer to the percentage of the total experience in the total sample of the Brazilian survey.
[b] Figures in this column refer to the percentage of the total experience in the total sample of Palmer's survey.
[c] Figures in this column refer to the probability value of statistical comparisons between Palmer's data and the Brazilian survey.

Saved by someone else. Question: 'Did any other person tell you of a 'warning' experience they had received concerning you which 'saved' you (or could have saved you) from a serious or tragic event such as illness, severe emotional crisis, accident, or possibly death?'

Twenty-seven per cent of the respondents answered 'yes'.

Saved someone else. Question: 'Did any of your own experiences you have indicated in this survey 'save' another person (or could have saved them) from a serious or tragic event such as illness, severe emotional crisis, accident, or possibly death?'

Eighteen per cent of the respondents answered 'yes'.

Changed attitudes, Question: 'Have any of the experiences you have indicated so far in this survey *significantly* influenced or changed any of your feelings or attitudes toward...'

The more significant data obtained in response to this question related to respondents' change of attitudes about their spiritual beliefs (43% of the total), followed by those who claimed a change in their attitudes about the self (35% of the total).

Influenced decisions. Question: 'Have any of the experiences you have indicated so far in this survey *significantly* influenced or changed any of the important decisions you have made in your life concerning...'

The most interesting data obtained in response to this question related to lifestyle, how to spend time, ideals, or purpose or goals in life (27% of the total sample), followed by the influence of the experience on decisions about the choice of whether to go to, stay in or drop out of school or college, and what to study as a major (25% of the total sample).

Discussion

We felt that the most significant datum we obtained was that 89.5% of the respondents reported they had had some kind of psychic experience. This percentage is high if compared to the results of other researchers. Broughton, for example, describes George Gallup's researches (Wilmington, Del.: Scholarly Research, 1979) and a poll conducted by CBS television in 1989 in connection with a broadcast of a '48 hours' program on psychic experiences, whose results were published in the ASPR Newsletter, Spring, 1990. Broughton states that 'anywhere from one half to three quarters of the population claim to have had one or more psychic experience'. (Broughton, 1991).

We think the high percentage of claimants is related specifically to the religious characteristics of Brazilian people. For example, the so-called mediumistic religions are very common in Brazil. Kardecist Spiritism and 'Umbanda' are the most well-known of these religions. Kardecist and Umbanda adepts are taught to enter altered states of consciousness, that are thought to be strongly psi-conducive (Stanford, 1987). Despite the fact that about 60% of our sample claimed to be Catholic, 79% of these reported that they believed reincarnation was possible, probable or a certainty (see table 4).

This belief in reincarnation is strong evidence of the influence of spiritualism on so-called 'official religion.' That is, it is very common in Brazil for people to have two religions: the official one, generally Catholic, and another one that is generally spiritualist in nature. This adherence to two

religions has happened largely because of the process of colonization suffered by Brazilians and other Latin Americans, a process that fostered religious sincretism (Bastide, 1960). Catholic religion was imposed. People 'accepted' it, but they did not abandon their original beliefs, instead mixing them with the imposed religion. Such a sincretic blend of religions was transmitted to new generations following colonization and have become a fundamental characteristic of Brazilian religiosity.

Many people in Brazil have been repeatedly encouraged to have psychic experiences. This encouragement is in addition to the general social acceptance of the phenomena and several religious practices in the country, especially those like the Umbanda and Candomblé (an African religion) and Kardecist Spiritism, are based on psychic experiences. Several protestant religions and even groups from the so-called 'Renovação Carismática Catôlica' (Catholic Charismatic Renovation) attribute many psychic experiences to the Holy Ghost, especially precognitions. So, it is seen as something good and is encouraged.

Besides the religious implications, the social status of people who claim to have psychical experiences is very high. These people are, in general, called sensitives or mediums. For people in general, a medium is not only someone who is a Spiritist and receives messages from deceased persons or provokes physical phenomena. A medium is also someone who has evolved extraordinary powers. That is, they are able to mediate between the visible and the invisible world, between the sacred and the profane. In this way, popular culture values psychic experiences as special gifts, not as evidence of pathology.

Because there is a general social acceptance of psychic abilities, it is easy for Brazilian people to report psychic experiences, in addition to the fact that many people have been repeatedly encouraged to experience them. As we can see from table 2 — about the incidence of psychic experiences — and table 3 — about the relevance of such experiences — there are some very significant differences between Brazilians' and Americans' data. Considering that experiments have demonstrated that believers in ESP achieve more significant results than non-believers (Schmeidler & McConnell, 1958), we think that cultural aspects can affect people's belief in psychic phenomena and because of this, people become more open to such experiences.

If we compare our data to Palmer's (1979) as to the religiosity of the respondents, we can see the number of people who believe in reincarnation and the number of people who profess a spiritualistic faith in Brazil is higher than in the USA. We could say it reinforces the idea that the belief, fruit of cultural aspects, can influence the incidence of psychic experiences (see table 4).

These characteristics of Brazilian beliefs could explain the strong social significance of the experiences for the respondents that the data demonstrate. About 90% of our respondents claimed to have had at least one psychic experience and of these most (80% of the total) said the experience or experiences they had had significantly influenced their lives or changed important decisions they were making. Similarly these experiences significantly influenced or changed their feelings or attitudes towards several important questions and situations. In addition, respondents claimed that their experiences saved themselves from some negative event (26%), saved someone else (27%) or that they were saved because of the psychic experiences of someone else (18%). These claims illustrate the social relevance of psychic experiences.

Another important point to be observed here is the constitution of our sample. As it was seen, 160 women and 21 men completed questionnaires. First, the preponderance of women respondents occurred because the bulk of Brazilian university students are women. Second, the classes

Table 4
Percentage distribution of religious affiliation according to the data collected and Spiritistic influence on Brazilian Catholicism

		(Palmer's survey)
Protestants	7.0	50
Catholics	61.5	16
'Umbandistas'	3.5	
Kardecist Spiritists	15.0	
Jewish	0.0	3
An 'Eastern' Faith	3.0	
Agnostic or atheist	3.0	21
Others	7.0	10
Catholics that are sympathetic to reincarnation	79.0	

in which the questionnaires were administered are from Humanities Courses, and in Brazil, women prefer these courses more than men do. In order to examine whether or not the preponderance of female respondents would bias the results we compared the number of males and females separately and discovered that the incidence and relevance of the psychic experiences for each group were comparable. That is, of the 21 male respondents, 90% claimed to have had some kind of psychic experience; and of the 160 female respondents, 89% claimed to have had some kind of psychic experience. We intend to administer the questionnaire to students from other kinds of courses to verify if the results persist.

It is possible that this sample is qualitatively representative of the Brazilian population in general because the university that was chosen (Faculdade Anhembi Morumbi) is a private university. In Brazil, in general, only wealthy people have the means to study in a public university. The entrance examination for the public university is very difficult and few people are able to study in a good private high school so as to be prepared for the public university entrance examination. In Brazil, public elementary and high schools are very poor in general and the teaching is not very good. (There are some rare exceptions.) Because of this, private universities have the biggest variety of people from different social classes: the poorest students can obtain scholarships and upper and middle class students can pay for the courses. Survey data indicated that 43% of the respondents were poor, 36.5% were from the middle class, and 21% were rich. Another point to support the notion that this sample might be qualitatively representative of the Brazilian population arises from the fact that the survey was conducted in a university in São Paulo City. This is very important because the migration to São Paulo from other Brazilian cities is quite extensive, providing São Paulo with a population that is a mix of people from all the regions of the country.

We intend to test whether or not these results persist in future extensions of our research in which we hope to increase the generalizability of our data statistically by increasing our sample size. At that point we will be better able to compare our Brazilian results to surveys conducted in other countries. For now we can say that if the results persist, there will be evidence for a larger incidence of psychic experiences in Brazil than in other countries in which parapsychological surveys have been done. At this point our data are not conclusive.

Rather, our data form the starting point for a more complete study of the Brazilian population. We hope other researchers will be inspired by our study and that they will undertake new parapsychological studies in Brazil.

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Enquête onder Braziliaanse studenten over aantal paranormale ervaringen en sociale relevantie ervan

Samenvatting: Dit artikel geeft het aantal paranormale ervaringen in het dagelijkse leven van studenten aan Braziliaanse universiteiten en het sociologische belang van die ervaringen. Bovendien wil dit artikel onderzoekers, vooral die in Brazilië, wijzen op de veelbelovende mogelijkheden voor veldonderzoek die dit land biedt. We presenteren de resultaten van de analyse van een lijst met 72 vragen, gedeeltelijk een vertaling van de 46 vragen die Palmer (1979) gebruikte, met enkele aanpassingen aan de Braziliaanse cultuur. De resterende 27 vragen stamden uit de Dissociative Experience Scale van Bernstein en Putnam (1986) en werden als vertaling in de vragenlijst opgenomen voor een later uit te voeren analyse. De resultaten waren bijzonder

interessant: 89,5% van de ondervraagden beweerde minimaal één paranormale ervaring te hebben. Het artikel bevat een gedetailleerde beschrijving van de resultaten van de enquête. In een volgend artikel willen we alle vragen afzonderlijk bespreken en vergelijken met de resultaten van andere onderzoekers. Bovendien willen we het onderzoek uitbouwen tot een statistisch representatieve steekproef van de Braziliaanse bevolking.

Umfrage über Häufigkeit und Sozialrelevanz paranormaler Erfahrungen unter brasilianischen Studenten

Zusammenfassung: Das Hauptanliegen dieser Abhandlung ist es, über Häufigkeit und Sozialrelevanz paranormaler Erfahrungen im Alltag brasilianischer Studenten zu berichten und Forschern, vor allem jenen in Brasilien, die vielversprechenden Möglichkeiten für produktive Felduntersuchungen in jenem Land näherzubringen. Die vorliegende Studie umfaßt die Analyse von Daten aus einem Fragebogen mit 72 Items, teils übersetzt aus Palmers Fragebogen mit 46 Items (1979) und mit einigen Anpassungen an die Gegebenheiten der brasilianischen Kultur versehen. Der Rest des Fragebogens umfaßt 27 Fragen aus der Dissociative Experience Scale von Bernstein und Putnam (1986). Diese Fragen wurden ebenfalls übersetzt und in den Fragebogen integriert, um Daten für eine spätere Analyse bereitszustellen. Die Ergebnisse waren sehr interessant: 89.5% der Befragten gaben an, wenigstens einmal eine paranormale Erfahrung gemacht zu haben. Deskriptive Einzelheiten der Umfrage-Ergebnisse werden vorgestellt. In einem späteren Beitrag sollen alle Items des Fragebogens analysiert und mit den Ergebnissen anderer Umfragen verglichen werden. Des weiteren ist geplant, die Untersuchung später auf einen statistisch repräsentativen Querschnitt der brasilianischen Bevölkerung auszudehnen.

Revue: Incidence et Pertinence Sociale des Expériences Psychiques des Etudiants Universitaires Brésiliens

Résumé : L'objectif principal de cet article est de rapporter l'incidence et pertinence sociologique des expériences psychiques dans la vie quotidienne des étudiants universitaires Brésiliens; et d'apporter à l'attention des chercheurs, spécialement ceux du Brésil, l'opportunité prometteuse d'études productives sur le terrain qu'offre le Brésil. La présente étude comprend l'analyse de données obtenues après administration d'un questionnaire de 72 items, en partie traduit du questionnaire de 46 items de Palmer (1979), avec quelques adaptations pour la culture brésilienne. Le reste du questionnaire comprend 27 questions de l'Echelle d'Expérience Dissociative, développée par Bernstein et Putnam (1986). Ces questions ont aussi été traduites et incluses dans le questionnaire afin de fournir des données pour une analyse à conduire plus tard. Les résultats furent très intéressants: 89,5% des répondants ont prétendu avoir vécu au moins une expérience psychique. Des détails descriptifs des résultats au questionnaire sont présentés. Dans un article à venir on a l'intention d'analyser tous les items du questionnaire, afin de les comparer aux découvertes d'autres. On a l'intention d'étendre l'étude à un échantillon quantitativement représentatif de la population brésilienne pour davantage d'analyse.

Incidências e Relevância Social das Experiências Parapsicológicas de Estudantes Brasileiros

Resumo: O principal objetivo deste trabalho é relatar a incidência e a relevância social de experiências parapsicológicas na vida diária de estudantes universitários brasileiros, e chamar a atenção dos pesquisadores, especialmente dos que fazem pesquisa no Brasil, para a promissora oportunidade que este país oferoce para se fazar estudos de campo produtivos. O presente estudo compreende a análise de dados obtidos através da aplicação de um questionário de 72 ítens, em parte traduzido do questionário de 16 ítens de Palmer (1979) com algumas adaptações de acordo

com a cultura brasileira. O restante do questionário compreende 27 questões de Escala de Experiências de Dissociação (Dissociative Experiences Scale), desenvolvida por Bernstein e Putnan (1986). Esse questões também foram traduzidas e incluídas no questionário para uma posterior análise dos dados. Os resultados foram muito interessantes: 89,5% dos respondentes disseram ter passado por, pelo menos, uma experiência parapsicológica. Detalhes descritivos dos resultados do questionário são apresentados. Em um trabalho futuro, pretendemos analisar todos os ítens do questionário, comparando-os aos reultados de outros questionários. Pretendemos também extender o estudo para conseguir uma amostra quantitativamente significativa da população brasileira para maiores análises.

Encuesta: Incidencia y Relevancia Social de las Experiencias Psíquicas de Estudiantes Brasileros

Resúmen: El principal objetivo de este trabajo es reportar la incidencia y relevancia social de las experiencias psíquicas en las vidas diarias de estudiantes universitarios brasileros y traer a la atención de los investigadores, especialmente los de Brasil, la prometedora oportunidad que Brazil ofrece para los estudios de casos. Este estudio es sobre los análisis de datos obtenidos del uso de un cuestionario de 72 preguntas, traducido en parte del cuestionario de 46 preguntas de Palmer (1979), con algunas adaptaciones para la cultura de Brazil. El resto del cuestionario consiste de 27 preguntas de la Dissociative Experiences Scale desarrollada por Bernstein y Putnam (1986). Estas preguntas también fueron traducidas e incluídas en el cuestionario para análisis que se llevarán a cabo más tarde. Los resultados fueron muy interesantes: 89.5% de los participantes alegaron haber tenido al menos una experiencia psíquica. Se presentan resultados descriptivos de los resultados. En otro trabajo se analizarán todas las preguntas del cuestionario y las compararemos con los resultados de otros investigadores. También planeamos extender el estudio con una muestra representative de la población de Brasil.

Incidenza e rilevanza sociale delle esperienze paranormali tra studenti universitari brasiliani. Un'indagine sul campo

Sommario: I principali obiettivi di questo lavoro consistono nel riportare l'incidenza e la rilevanza sociologica delle esperienze paranormali nella vita quotidiana di studenti universitari brasiliani e nel sottoporre all'attenzione dei ricercatori, in particolare quelli in Brasile, le promettenti opportunità offerte dalle indagini sul campo in questo Paese. Lo studio è un'analisi dei dati ottenuti dopo somministrazione di una lista di 72 domande, in parte tradotta da quella di Palmer (1979) composta da 46 voci e adattata alla cultura brasiliana. La parte restante del questionario era costituita da altre 27 domande riprese dalla Dissociative Experience Scale (Scala delle esperienze dissociative) messa a punto da Bernstein e Putnam (1986). Anche queste domande sono state tradotte e incluse per raccogliere dati che verranno analizzati in futuro. I risultati sono stati molto interessanti: l'89,5% dei rispondenti ha affermato di avere avuto almeno un'esperienza paranormale. Vengono presentati dettagli descrittivi dei risultati ottenuti. In un prossimo lavoro intendiamo analizzare tutte le domande del questionario, effettuando confronti con i risultati di altre indagini dello stesso genere. Intendiamo inoltre allargare lo studio a un campione quantitativamente rappresentativo della popolazione brasiliana, per compiere ulteriori analisi.

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'Physics Envy': The Politics of Parapsychology

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An Essay Review of *Women and Parapsychology: Proceedings of an International Conference Held in Dublin, Ireland, September 21-22, 1991.* Edited by Lisette Coly and Rhea A. White. New York: Parapsychology Foundation, 1994. Pp. xvi +289. $20.00, cloth. LC 94-66458. ISBN 0-912328-45-2.

Having dawdled too long over the writing of this review, my inspiration to begin came this morning when I entered the psychology department of the University of Edinburgh. There is to be a party for the fourth year students whose final exam is today. Staff have been invited to contribute dishes for a buffet. This year, as in previous years, the coordination and preparation for this party is being done by two women. They are well-established and well-respected researchers and teachers of psychology yet they find themselves in the stereotypically female role of caterer.

There they were, scurrying about arranging tables and setting out dishes. It struck me that the members of this department, both male and female, should be more aware than most of the existence and operation of social and sex-role stereotypes. Hence, one might expect to see more involvement in the food preparations from at least the more enlightened male department members[1].

I climb the stairs to my office, open the fridge and find a very tasty-looking salad that my male boss (who is one of the least prejudiced folk I know) brought for the party. However, I know for a fact that the salad was prepared by - his wife - who has her own full-time job to do in another department of the University.

And then I look at myself, who has reduced her full-time employment in parapsychology in order to be a mother to two young boys (and I am very happy and lucky to be able to be both a mother and a parapsychologist). I feel that I haven't encountered much explicit gender prejudice in my career, and yet looking around me there is evidence everywhere of the operation of subtle but all-pervading expectations about the appropriate characteristics of, and roles for, men and women. Usually, I believe, we are unaware of these stereotypes until they are challenged when, for example, we see that the departmental party is being organised by men and that the women staff members' husbands have taken time out from their own careers in order to prepare a salad for their wives who are busy with more important matters. See what I mean?

This is the context in which I come to review the Proceedings of the 1991 conference of the Parapsychology Foundation (PF), on the topic of *Women and Parapsychology*. This volume has already been admirably reviewed by Harvey Irwin (1995) and those readers who want an informed review of the detailed contents of the Proceedings should turn to Irwin's work. Though I have some familiarity with psychological research on sex role stereotyping, parapsychologists such as Marilyn Schlitz, Rhea White, Nancy Zingrone, Car-

Acknowledgements: I would like to thank Lisette and Eileen Coly, Robert Morris, Jessica Utts, Rhea White, and Nancy Zingrone for their helpful comments.

[1] I must confess to using a bit of artistic license here, in order to illustrate the point that is, in general, quite valid.

los Alvarado, David Hess and Harvey Irwin are far better acquainted than I with the feminist and sociological literature. I would like to present a more personal perspective on the issue, from my point of view as a woman parapsychologist.

Despite the tone of my introductory paragraphs, I hope I have not discouraged readers. Those who have stuck with me to this point should be reassured that I will not be presenting some kind of 'feminist ranting'. Indeed, I expect I was not alone in having an initial knee-jerk reaction against the title of the Proceedings along the lines of 'oh dear, I hope this is not another women=good, men=bad, characterisation of the issues'. I wonder how many other parapsychologists, males and females, who would usually read the PF Proceedings with interest, paused this time because of their anticipation of the contents of the volume. However, I gritted my teeth and began to read and discovered that some of the political debate within parapsychology could be informed by the feminist literature.

In this essay-review, I will attempt to share my elementary understanding of how parapsychology may be viewed from a feminist perspective, based on what is contained in the *Women and Parapsychology* volume. My rationale is that, like me, many readers will have had a prejudiced reaction to the 'F-word', leading to a failure to give serious consideration to arguments with a feminist orientation. I will then consider the contemporary position because already five years have passed since the conference was held, and I will consider suggestions for the future. Firstly, though, some factual information about the conference.

Women and Parapsychology Outline

The conference ran from September 21-22, 1991. As usual, it was organised by the Parapsychology Foundation, particularly Lisette and Eileen Coly, on a single theme. Because the PF was celebrating the 40th anniversary of its inception by Eileen Garrett, the conference venue was Dublin, Ireland, close to Garrett's birthplace.

Most presentations took one of three possible perspectives on the chosen topic: 1. women in parapsychology from a historical and/or cultural viewpoint; 2. a feminist approach to psi; and, 3. the experiences of contemporary women parapsychologists. The moderator of the conference was Rhea White, who spoke on 'The relevance to parapsychology of a feminist approach to science'. There were eight other participants. Jessica Utts - 'Social, institutional, and cultural influences of gender on science'. Beverly Rubik - 'The feminine archetype: A missing factor in contemporary psi research'. Susan Blackmore - 'Are women more sheepish? Gender differences in belief in the paranormal'. Nancy Zingrone - 'Images of woman as medium: Power, pathology and passivity in the writings of Frederic Marvin and Cesare Lombroso'. Joanne McMahon - 'Eileen J. Garrett: A woman who made a difference'. Marilyn Schlitz - 'Women, power, and the paranormal: A cultural critique'. Anjum Khilji - 'Behind the veil: Muslim women's contributions to parapsychology'. Ruth-Inge Heinze - 'Life patterns of women active in parapsychology'. Each participant also presented a 'position paper' on the final day, whose aim was to make recommendations for action. In addition, there were eight 'observers', who contributed to the discussion periods: Carlos Alvarado, Marco Bischof, Gerd Hövelmann, Rebecca Hughes-Hartogs, Denise Iredell, Wanda Luke, Hans Michels, and Sean O'Donnell.

The aspect of the conference that I would like to dwell upon is the 'feminist' approach to psi because I feel that this approach can allow some debates within parapsychology to be viewed in a new light.

A 'Feminist' Approach to Psi

Before I elucidate the meaning of a 'feminist' approach to psi, I want to make a very important point. When we talk of 'feminist' and 'masculinist', or 'female stereotyping' and 'male stereotyping', we are referring to a *group of traits* that are socially defined as being appropriately char-

acteristic of 'typical' women and men, respectively.

To illustrate such traits, consider the Bem Sex Role Inventory (Bem, 1974) that lists 60 adjectives. Items for the inventory were selected by student judges who were required to rate the desirability in American society of approximately 400 personality characteristics. Those desirable traits that were judged to be more desirable for one sex than for the other were designated 'masculine' and 'feminine' and those traits judged equally desirable for either sex were designated 'neutral'. The 20 'masculine' items include 'acts as a leader', 'analytical', 'competitive' and 'dominant'. The 20 'feminine' items include 'affectionate', 'gentle', 'sympathetic' and 'understanding'. The 20 'neutral' items include 'adaptable', 'happy', 'reliable' and 'theatrical'.

We are not, however, suggesting that these traits are indelibly and uniquely linked to the sexes, so that only men can have 'masculine' traits and only women can have 'feminine' traits. In reality, you can get 'feminine' men and 'masculine' women, and various shades inbetween (and thank goodness for that!).

Perhaps I can best convey this point by overstating it somewhat. Let us for the moment discard our biological sexes as irrelevant (though I realise that hormones and other physiological factors suggest otherwise). When we talk of 'masculine' and 'feminine' we are *not* referring to the male and female sexes, but to 'male-type traits' and 'female-type traits'. Therefore, although some of the conference participants may have been tempted to characterise parapsychology in terms of the 'battle of the sexes', this would be a gross oversimplification. Having defined my terms, I will omit the rather irritating inverted commas henceforth.

I'm glad to say that most of the participants resisted claiming the moral high ground. Instead of saying (and here I caricature) 'women are sensitive and intuitive, something you men can never be, and we are better than you', the tone was more like 'here are the characteristics of a feminist approach to science/psi, see how it could complement a masculinist approach'.

I think the term *masculinist approach* is merely another way to conceptualise the prevailing empiricist paradigm that has tended to dominate scientific endeavours. In parapsychology, we often see a dichotomy drawn between this paradigm and more subjective approaches. See for instance the paper by Fiona Steinkamp elsewhere in this issue contrasting experimental and experiential approaches to parapsychology. Other terms that are used to denote the same dichotomy include androcentric view (versus feminine view), agentic research (versus communal research), hard versus soft research, quantitative versus qualitative research, and so on.

In her paper, White notes that

> every field took for granted the basically androcentric view that science is "unambiguously based on observation of 'facts' or 'data', linked by rigorous logic to hypotheses and theories... and... progresses through an accumulation of such knowledge" ... Increasingly, marginalised groups, including feminist scientists in the physical, social, and behavioral sciences, have begun to question this paradigm and to initiate new conceptions of the nature of science... they became skeptical concerning the scientific method and the objectivity of its findings, eventually even questioning the basis of scientific knowledge itself (p.2)

Utts too remarks on the cultural context that has influenced how science is conducted:

> The male-oriented culture emphasizes authority over majority rule, "hard" data over "soft" data, the impersonal over the personal, and dualism over unity. This cultural context has resulted in the myths that science is always objective, and that a complex system can be explained by examining the function of each of its parts... Advances in medicine, electronics, and many of the other "hard" sciences have led to a

> complacency and trust in the current scientific method (pp. 40-41)

In other words, the scientific method has had notable successes when dealing with relatively simple and deterministic systems. It has enabled us to predict and control, so that we know what to expect when we press a light switch. There obviously *has* been an accumulation of knowledge with this method, and parapsychology aspires to gain respectability for its controversial subject-matter by aligning itself with the hard sciences. In her passionately-argued contribution to the Proceedings, Beverly Rubik suggests parapsychology has 'physics envy':

> The subjugation of the feminine goes deep in Western culture. Consider the metaphors "hard" and "soft". These are frequently used in value judgments, and they implicitly reflect gender. "Hard" facts are good; the connotation "soft-headed" is bad. The hard sciences are considered to be more difficult, more important, and have larger budgets than the soft sciences. There is a hierarchy within the sciences, with the "hard" sciences at the top reigning above the "soft". The dominant notion of causality in science involves the reduction of the "soft" to the "hard", which is regarded as more fundamental. It is no wonder that parapsychology has evolved in recent times in the way it has, with attempts to move toward greater "hardness" (p.53)

Like many other parapsychologists, I suspect, I have been educated and socialised to regard the scientific method as being the most appropriate method to use in order to identify causal relationships. Other qualitative methods are useful in describing phenomena in their natural settings and, like Louisa Rhine's case collection, for suggesting hypotheses for more 'rigorous' testing in the laboratory. There are subtle and not-so-subtle reinforcements for this assumption. For instance, I feel that selection processes for the presentation of papers at Parapsychological Association (PA) conventions can, depending on the orientation of the program chair, encourage experimental research and disparage qualitative or field research. This is something of which I am as guilty as my male peers. I am not alone in feeling this tension. In *Women and Parapsychology,* Marilyn Schlitz eloquently describes her own mixed orientation:

> In an effort to overcome some of the prejudices against parapsychology, I, like my predecessors, have worked within the "male"-dominated objectivist tradition. I have been recognized by the scientific establishment as one who has successfully controlled the appropriate conditions, manipulated proper variables, used correct statistical methods, and achieved statistical significance... Having done so, I am convinced that this perspective reveals only a small part of the psi story. What is lacking is the stereotypical "female" side that gives primacy to spontaneity, subjective experience, emotions, feelings, and other intangible components (p.165)

In her position paper, Rhea White too makes the point that the PA may be constricting the range of approaches to psi, and thus narrowing ways in which we may understand psi: 'Science should be pluralistic. People with different agendas should be courted and encouraged, not excluded. Instead of trying to bend everyone to one way, as the Parapsychological Association attempts to do with its stringent membership requirements, we might progress much more rapidly by diversification and cross-fertilization' (p.248).

Some theorists of science, including those with a feminist orientation, are making a strong argument that the traditional masculinist methodology is ill-suited to dealing with complex systems - and this point should be particularly telling for a parapsychology whose subject-matter is so ineffable that we have to introduce the neutral term 'psi' in order to describe it without making any unwarranted theoretical assumptions. There is encouragement also from developments in modern physics, where matter is seen to have indeter-

minate features, and where the act of observation may itself affect that which is been observed. This differs from the previously described mechanistic and reductionistic approaches and, in this sense, perhaps physics envy is no bad thing. Rubik argues for a more humanistic framework for parapsychology that would be gender-balanced:

> In a typical modern psi experiment, the participant is regarded as the one who affects a "target" or experimental outcome. Alternatively, we may consider the psi participant, the experimenters, and the ground of their being in that particular moment in space-time as an integral unit. The paradox of being separate (masculine archetype) and wholly interconnected in a unity (feminine archetype) both need to be incorporated in a new paradigm for parapsychology... a systems approach... Rather than putting all the emphasis on the psi participant, acknowledgement of a holistic ideology may be an important step forward for psi research, both philosophically and methodologically. (p.56)

Such a holistic, systems approach need not be mystical and vague. For instance, Rubik argues that it would require a more complete description of the context in which the experiment is taking place, including factors such as solar activity and geomagnetic fields. This is something that parapsychologists are already beginning to take on board, and we begin to see why reproducibility-on-demand is such a challenge. Later, Rubik states that 'The real challenge for parapsychology is not simply to refine a method for reproducibly measuring and documenting psi, nor to enhance the magnitude of the psi phenomena observed, but to create a paradigm that appropriately addresses the fullness of the phenomena and is gender balanced and holistic in scope' (p.57). Schlitz describes how she has attempted to introduce more balance to her research by exploring more qualitative strategies:

> Using myself as an experimental subject... has allowed me to circumvent the subject/object dichotomy so pervasive in a science dominated by stereotypical "male" traits... In conjunction with rational discussions of methodology in formal publications, I have tried to include my personal experiences. This provides an integration of gender styles, although objectivity and reductionism are still privileged by my commitment to experimentation... I have begun to study the beliefs and practices of successful psi experimenters... In this process, however, it is clear that the qualitative dimension remains subordinate to objective research paradigms. Like the women before me, I have played with the gender boundaries inherent in the practice of parapsychology without offering a direct challenge to the stereotypical "male" dominated research paradigm. (pp. 165-166)

Although some parapsychologists might be put off by the F-word and related terminology, actually the participants at this conference are presenting a framework in which to conceptualise the old qualitative-quantitative debate within parapsychology. The debate is not new, but to locate it in terms of gender relations may be new to folk like me who have tended to shy away from too-strident preachings in the past. Although there is some preaching in *Women and Parapsychology*, I think it should be read for the new perspective it gives on an old problem for parapsychology.

As I read the volume, I got the impression that the participants were still at the stage of organising their thoughts; this was indeed a ground-breaking conference. The basic characteristics of a feminist approach to science were fleshed out. For me, one of the most useful comments was made by Jessica Utts, in the context of the concrete signs of progress for parapsychology that she and others have found through recent meta-analyses. The prevailing paradigm has led to proof-oriented research that has enabled parapsychologists to demonstrate a statistical anomaly. The introduction of a feminist perspective would shift the em-

phasis somewhat towards a greater understanding of people's psychic experiences: 'we would like to know more about those experiences. Whether they are what we think they are or not, statistics is not going to tell us. We need other methods for doing that' (p.269).

We still need the experimental approach, but there is a growing body of considered opinion, not restricted to feminists, arguing that a more complete understanding of complex phenomena is to be gained by the introduction of a feminist approach to complement the prevailing paradigm.

The Contemporary Position and the Way Forward

Well, the girlies have tidied away the last crumbs from the departmental party and I am left to reflect on the position of women parapsychologists (here, the men start to get restless!) When, over ten years ago, I first contacted Robert Morris about the possibility of my working with him, I was favourably impressed that in his reply he addressed me as a 'Ms' (I didn't have my PhD at that time). This was a good omen, I thought, a sign of progressive thinking (especially so in the context of the traditional Scottish culture!). He hasn't disappointed me, but I know that other female parapsychologists haven't been so lucky.

In her position paper for the Proceedings, Nancy Zingrone reports on the outcome of a survey of nine women with various degrees of interest and involvement in parapsychology. On the negative side, most felt that they had been disadvantaged in one way or another because of their sex. For example, one said 'I was an underling where I was working... and so I wasn't considered for a position of power as a rule, and when such things were considered they were in traditionally female roles like editing a journal... for which we had female precursors... the fact that you had a female there before made it easier for a female to come after' (p.223). I could give further examples, but I am sure that readers have already got the point.

On the plus side there was a feeling that parapsychology was a less gender-biased field than most. Perhaps it is because psi phenomena themselves seem to be gender-blind (despite common assumptions to the contrary). Perhaps, also, it's important that parapsychologists, whether they be male or female, are already a marginalised group. Internal schisms become less relevant when an even stronger prejudice is felt from outside the group. Let's be positive and see how progress could be made, both in enhancing the position of women in parapsychology, and in progressing parapsychology towards a more balanced treatment of our subject-matter. The suggestion is, of course, that the first may lead to the second.

The point made by the woman quoted above in Zingrone's survey can be turned around to women's advantage and, I hope, to the advantage of the field as a whole. It is through having role models, mentors, and having women in influential positions that a self-perpetuating system can change. Jessica Utts makes this point in her contribution to the Proceedings:

> I believe the climate on most campuses will not change significantly until there is a critical mass of women in administration. The daily climate on any campus is strongly influenced by department chairs, deans, and higher level administrators. On most campuses, these are the people who are responsible for pay rises and promotions. By their actions, these people send messages to the campus community about what constitutes acceptable behavior (p.37)

Zingrone's position paper concludes with a list of guidelines for the future, specifically aimed at women in parapsychology, to help to counter gender-based prejudices. These include: being an active member of the PA, prepared to take on responsibilities; never accepting second authorship on a paper when you deserve first and writing sole-authored papers whenever possible; gently prodding male colleagues when you feel that they are be-

ing unfair, to raise their consciousness; mentoring young parapsychologists, particularly women; and helping to build an "old girls" network. In my experience, the operation of gender-based prejudices is usually so subtle that the perpretators do not even realise that they are being prejudiced, until that is tactfully pointed out to them.

Of course, prejudice can work in both directions. For instance, I have recently noticed a backlash in the printed media against the high profile of 'women's health' issues. Men are poorly represented in the health lobby and consequently less provision is made for them, to their detriment. We shouldn't get too 'hung up' on the gender issue. As Utts says:

> we must learn when it matters that we are women and when it does not. Accusations of bias when it does not exist will ultimately destroy our credibility. Labeling ourselves as victims and behaving accordingly is the best way to ensure that we are treated as such. On the other hand, we are in the best position to identify inequities that our male colleagues may not even be aware exist (p.239)

Concluding Comments

Because a conference can be a rallying point that leaves participants buoyed up and full of optimism for the future, I decided to contact some of the original participants in *Women and Parapsychology* to see how they felt about these issues now, five years later. Lisette Coly was glad to see that Susan Blackmore and she were not alone in trying to juggle with career and children, though I agree with Lisette that we can't have it all and the career is suffering. On a more positive note, though, the PF perception was of an increasing involvement of women in parapsychology since the conference (Coly, personal communication).

Rhea White felt that the situation had not improved in the interim; she was concerned that with funding becoming more restricted and the 'old boys' network making most of the funding decisions, women would inevitably suffer. On the plus side, White felt that as younger women entered the field, with some knowledge of feminist views and with technical familiarity becoming widespread, 'it will trickle on down eventually, and I think the conference itself, and the proceedings, have injected impetus to the trickle' (White, personal communication).

Nancy Zingrone made some comments that validated my instincts that many would have been put off by the topic of the conference: 'some otherwise intelligent men in the field expressed disinterest in the content of the conference because it was just "a woman thing"'. However, Zingrone was pleased to note the favourable reaction from male colleagues and friends to her arrangements as 1995 Program Chair for the PA convention, despite the fact that she had increased the profile of women through invited addresses and session chairs. I was sad, but not surprised, to hear that since the conference Zingrone has continued to hear dispiriting tales from female colleagues of gender-based discrimination. She concluded:

> there is still a long way to go to get true parity for the women in the field, to make sure that there are equal opportunities for research jobs and places in PhD programs, on substantive, important panels at conventions, in the "places that count"... I believe strongly that parapsychology is more gender-blind than other disciplines... (but) if we don't make the inequities known and/or work to end them, many of the men will just assume that everything is fine and nothing will change (Zingrone, personal communication)

The most up-beat feedback came from Jessica Utts, who I would like to quote at length to end this essay-review:

> The most significant change affecting the lives of all academics and scientists in recent years is the wide-spread use of the internet, and parapsychologists are no exception. One of the advantages of the internet is that it is truly

> "gender-blind" in terms of access to both placing and receiving information. Whether it be in participating in private email lists or placing information on a web page, women are able to have as much access as are men. As one conservative U.S. politician has said, those with the upper hand are no longer those who can carry the most weight, but those who can type the fastest. Further, the use of the internet for intellectual discussions creates a community spirit and atmosphere that is more conducive to the traditional way in which women are perceived to "do science" than the way in which men are perceived to do it. I think this has created a wonderfully positive change that could not have been anticipated at the time of the conference. (Utts, personal communication)

Oh well, that's this job finished. Time to go change the baby's nappy!

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Book Review: *Seeing Through Statistics*

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A review of *Seeing Through Statistics* by Jessica M. Utts. London: International Thomson Publishing Europe, 1996. Pp. xvi + 464. £21.95, pbk. ISBN 0-534-25776-3. California: Wadsworth Publishing Company.

This book is unlike any other statistics book that I have encountered so far; it uses plain English, it is clear, concise and easy to understand and it is actually enjoyable to read from cover to cover. This book also differs in that its emphasis is on how to understand rather than on how to compute statistics. Focusing on the ideas behind statistics provides a solid foundation that later facilitates an understanding of the formulae and calculations which accompany them. Because most people seem to rely on computers to analyse their data these days, rather than doing the calculations by themselves, it is important that we maintain an understanding of what the computer is actually doing, why and whether it is appropriate. The use of real-life examples and case studies from various media sources helps to convey both the utility and the limitations of statistical methods.

This book succeeds in demystifying statistics and empowers the reader with the confidence and ability to understand, interpret and make judgements based on statistics on a day-to-day basis.

The introductory to intermediate level of this book, together with its emphasis on real-life applications, renders it suitable for a wide audience and it is broadly aimed at consumers, students, parents and professionals. Part 3 of this book 'Understanding Uncertainty in Life' is of particular interest to parapsychologists because it covers probability and chance and factors affecting people's judgements when they are faced with uncertainty. There is also a chapter on meta-analysis in the latter part of the book. Case studies and examples involving ESP are also used throughout the book.

The book is divided into four parts and consists of 26 chapters. Each chapter is roughly equivalent to the contents of a one-hour college lecture but the book is also designed to be used without any tutorial support. A considerable amount of effort has obviously been put into designing the structure and layout of this book. The boxes that summarise salient points in some chapters are particularly useful. The author writes in a precise manner using simple wording as much as possible and new terminology is clearly defined as it is introduced. The author has also attempted to anticipate and to answer common questions or comments expected from the reader.

Each chapter begins with a number of thought questions to start the reader thinking about some of the issues that will be addressed within the chapter. Throughout each chapter there are numerous case studies and examples that clearly illustrate the points being made. The reader is also taken through any calculations in a step-by-step fashion. At the end of each chapter there are exercises and mini-projects that can be attempted and sections 'For Those Who Like Formulas' that cover the mathematical basis of the statistics. I, personally, was a little put off by the sheer number of

these exercises. However, I can appreciate that these are probably necessary because the book is designed to be read by a wide audience with a possibly differing knowledge of statistics and it is also designed to be used on its own without any tutorial support. In the following paragraphs I will attempt to summarise the topics covered in each part and each chapter of the book.

Part 1 is entitled 'Finding Data in Life' and consists of six chapters which aim to illustrate how data should be collected in order for it to be meaningful. Chapter 1 introduces some of 'The Benefits and Risks of Using Statistics' and gives examples of improper use of statistics in the media. The differences between observational studies and experiments are introduced. The chapter emphasises the need for representative and sufficiently large samples of data and also the need to know information about samples and data collection methods as well as the results when evaluating studies.

Chapter 2 encourages caution in accepting the results of reported studies. Seven critical components that should be considered when assessing or designing a study, such as the source and context of a study, who or what was studied and how they were selected, the measurements taken and the magnitude of any effects, are outlined. The chapter ends with four hypothetical news articles that illustrate bad reporting of studies.

Chapter 3 focuses on the problems associated with defining measurements and illustrates some of the mistakes and misunderstandings that can occur. Problems that can occur when asking people questions are also considered along with the advantages and disadvantages of open versus closed questions. The chapter also looks at different types of variables and the validity, reliability, bias and variability of measurements.

Chapter 4 looks at how to get a good sample of participants and concentrates on different sampling methods such as simple random, stratified, cluster, systematic and multi-stage sampling and also random-digit dialling methods. The chapter also looks at some of the sampling disasters that can occur such as using the wrong sampling frame or using a haphazard or convenience sample.

Chapter 5 focuses on studies that attempt to detect relationships between variables. The chapter differentiates between experiments and observational studies and considers what constitutes a good design and what can go wrong in each case. The rationale behind randomisation and the use of control groups, placebos, blinding and matched-pairs and block designs is also covered. Explanatory versus response variables are introduced together with confounding variables and possible interactions between variables.

Chapter 6 brings together chapters 1-5 and gives guidelines on how to evaluate a study. Each of these guidelines is then considered in relation to five real-life case studies such as smoking during pregnancy and children's IQ.

Part 2, entitled 'Finding Life in Data', teaches the reader how to summarise data in a useful way, how to detect and quantify relationships between variables, how to detect misleading graphical representations and how to interpret economic statistics. Part 2 introduces what can be done with data once it has been collected and aims to increase awareness of the utility of data and to encourage critical evaluation of results reported in the media.

Chapter 7 focuses on how to organise and summarise data once it has been collected. Measures of central tendency, and variability and the shape of data are considered. Meaningful ways of displaying data in the form of stemplots and histograms are also demonstrated. Other topics include five-number summaries and how to compute the variance and the standard deviation.

Chapter 8 covers the bell-shaped or normal curve and introduces percentiles, standardised and z-scores and familiar intervals. Chapter 9 covers the basic principles that graphical representations of data, such as pie charts, bar graphs, pictograms, line graphs and scatterplots, should and should not follow. This chapter concludes

with a useful checklist of questions that should be considered when viewing graphical representations of data.

Chapter 10 discusses correlation and regression. It considers the strength and the statistical significance of relationships. It also covers the features of correlations and gives examples of both positive and negative relationships. It also looks at specifying linear relationships with regression.

Chapter 11 looks at how relationships can be deceiving and considers some of the problems with and the reasons for correlations between variables. The impact that outliers can have on correlations, especially with small sample sizes is discussed together with what can happen if groups of data are inappropriately combined. Emphasis is placed on the notion that 'correlation does not imply causation' and the author suggests that the only legitimate way to establish causality is to design appropriate experiments.

Chapter 12 looks at relationships between categorical variables and illustrates how to assess the statistical significance of a 2x2 table. One of the case studies in this chapter is based on the Bem and Honorton (1994) paper that investigated whether static or dynamic pictures are more successful as ESP targets. This chapter also looks at relative risk, increased risk and misleading statistics about risk. Also considered is Simpson's Paradox - a situation where there seems to be a relationship between two variables in one direction if a third variable is not considered, but where the relationship seems to be in the opposite direction if the third variable is considered.

Chapter 13 looks at some of the common economic indicators, such as the Consumer Price Index, and their uses. Chapter 14 considers the components of time series data, such as long-term trends, seasonal components, irregular cycles and random fluctuations, and provides a checklist of issues to consider when evaluating reports of time series studies.

Entitled 'Understanding Uncertainty in Life' part 3 aims to help the reader to understand probability and chance and to enable him/her to make better decisions when faced with uncertainty.

Chapters 15 and 16 cover how to calculate and interpret probabilities for simple events. Chapter 15 looks at the relative-frequency and personal interpretations of probability and the calibration of the personal probabilities of experts. Chapter 15 also covers the rules of probability such as mutual exclusion and independence of outcomes.

Chapter 16 looks at how knowledge about the long-term relative frequency of events can be used to make short-term predictions. Familiar examples such as playing the lottery and betting on sports events are used as illustrations. The chapter also covers long-term gains, losses and expectations and how to use expected values to make decisions.

Chapters 17 and 18 cover the psychological factors that can influence an individual's judgements when faced with uncertainty. Chapter 17 looks at the psychological influences on personal probability. It covers the certainty and pseudocertainty effects and looks at how personal probabilities can be distorted. Also covered is optimism, reluctance to change and overconfidence. Reluctance to change one's own personal probability or beliefs in the face of new data is noted as being one reason why the scientific community and people in general may have difficulty accepting evidence for phenomena such as precognition. The chapter ends with tips on how to improve personal probabilities and judgements.

Chapter 18 looks at what can happen when a person's intuition differs from the relative frequency of an event. It considers coincidences, the gamblers' fallacy and confusion of the inverse. The chapter points out that sometimes people may underestimate the probability of a coincidence occurring and seek an alternative explanation (that could be paranormal) for an event they consider unlikely to have been due to chance. The author points out that although most coincidences might seem improbable for the individual concerned, the probability of the event happening to

someone somewhere might be considerably higher.

Part 4 is entitled 'Making Judgements from Surveys and Experiments' and is more technical than the rest of the book. Part 4 illustrates how inferences about populations can be made on the basis of samples of data. Chapter 19 introduces the notion of generalising from samples to populations. It covers what to expect from sample proportions and sample means. Chapter 20 covers how to estimate sample proportions using confidence intervals.

Chapter 21 covers how to estimate a population mean on the basis of a sample mean. It looks at how to construct a confidence interval for a mean and for the difference between two means. The chapter then looks at some real-life case-studies in order to see how journals present confidence intervals, standard errors of the mean and standard deviations.

Chapter 22 looks at the basic procedures for hypothesis testing that involve determining the null and research hypotheses, summarising the collected data, generating an appropriate test statistic, evaluating the likelihood of the test statistic value if the null hypothesis is true and making a decision as to which hypothesis to accept. The two errors that can be made when hypothesis-testing, i.e. type 1 and type 2 errors, are illustrated using courtroom and medical analogies. A case study based on the ganzfeld procedure is also used to illustrate how hypothesis-testing works in practice.

Chapter 23 looks at some worked examples of hypothesis testing and examines how tests are reported in the media and in academic journals. Hypothesis tests involving proportions and means and chi-square tests for categorical variables are covered.

Chapter 24 looks at what differences between groups actually mean and points out that although test statistics and *p*-values can indicate whether there is a relationship or difference between variables, they do not tell you anything about the size of the effect. This chapter also illustrates how sample size can affect the power of tests and thus whether or not relationships or differences between variables will be detected.

Chapter 25 introduces meta-analysis, a topic that seems to be covered in very few introductory statistics books. The chapter explores the two important issues that have to be considered when evaluating or carrying out a meta-analysis: which studies were included and whether the results were compared or combined. Some of the benefits of meta-analysis, such as producing more accurate estimates of small effect sizes, suggesting new avenues for research and/or methodological improvements and the detection of patterns across studies, are discussed. Criticisms of meta-analysis such as the file-drawer problem, the possibility of confounding variables and the possible effects of subtle differences in treatments across studies are also addressed.

The final chapter consists of a series of case studies from newspaper or journal articles. These case studies are designed to enable the reader to apply what has been learnt in the preceding chapters. The salient points are discussed at the end of each article and this enables the reader to evaluate their understanding of the book.

In summary, this is a very readable and easily understandable book. Its major selling points are its emphasis on how to understand the ideas behind statistical methods and its emphasis on applying this knowledge in normal everyday life.

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Book Review: *Parapsychology and Thanatology: Proceedings of an International Conference held in Boston, Massachusetts, November 6-7, 1993*

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A review of *Parapsychology and Thanatology: Proceedings of an International Conference held in Boston, Massachusetts, November 6-7, 1993* edited by Lisette Coly and Joanne D.S. McMahon. New York: Parapsychology Foundation, Inc., 1995. Pp. xv + 261. Hbk: ISBN 0-912328-46-0. $20.00.

The last few years have seen not a flood, indeed, but certainly a modest trickle of books about or related to the topic of survival (Almeder, 1992; Fenwick & Fenwick, 1995; Geis, 1995; Paterson, 1995; Kellehear, 1996). The present volume belongs in this series, and encapsulates some of its overall characteristics. Thus much more space is devoted to reworking and reflecting upon material already in print than to the presentation of new findings, and among the various categories of ostensible evidence for survival most attention is given to cases of near-death experiences (NDEs) and to cases suggestive of reincarnation.

Parapsychology and Thanatology (surely thanatology is an inappropriate word) contains eight papers. We can divide them into four very roughly demarcated groups. Two papers present new factual materials; two are largely prescriptive, in that their authors recommend ways of proceeding in the future; one is mainly defensive, in that its author is defending himself against a critic, and three are primarily theoretical.

The two factual papers are concerned with NDEs and related experiences. Both are admirably clear in presentation and cautious in interpretation. Madelaine Lawrence discusses the experiences of 111 patients who had been clinically unconscious. Between them these patients reported eleven NDEs, seven out-of-body experiences (OBEs) not associated with the approach of death, eight near-death visits from relatives or friends (mainly deceased), and two encounters with the Grim Reaper. Lawrence presents sample cases and some general remarks on the phenomenology of these experiences. She concludes that the medical profession, patients and patients' relatives would all benefit if information about such experiences, and their frequency, was more widely disseminated.

Justine Owens presents an analysis of ostensibly paranormal experiences unearthed during a survey of 200 NDEs, for about half of which medical records were available. She divides the reports into four categories: cases of apparent out-of-body perception during the NDE; claimed contact with deceased persons during the NDE; reports of telepathic communication or precognition during the NDE and/or an increase in the frequency of such abilities after it; and instances of unusual healing during the NDE and/or the development of the ability to heal after it. Many of these paranormal experiences clearly made a great impression on the patients themselves; but Owens thinks most of them can be accounted for in terms of such factors as general knowledge about the 'medical emergency script', the unconscious processing of auditory information, and the enhanced vividness of imagery that seems characteristic of NDE situations. However she is not one of those who dismiss NDEs as 'just' mental fabrications. The reports

describe rich and remarkable mental events, in need of serious study; and besides that Owens has in fact come across at least a couple of instances of apparent ESP during or linked to a NDE that seem to have struck her rather forcibly. Her conclusion with regard to the supposed paranormal element in NDEs is that 'progress in this area may require either studying very large numbers of cases or providing appropriate targets in medical environments where NDEs are likely to occur' (p. 166).

The first of the 'prescriptive' papers is by Michael Grosso. Grosso thinks that we have reached a stalemate over the question of survival, and offers five proposals that might help us to emerge from it. We should broaden our database; we should look at the question of survival of death in an evolutionary perspective; we should be prepared to settle for probabilities rather than certainties, for a 'scientifically grounded myth' of afterlife (by which I think he must mean a myth incorporating, however obscurely, some valid hints of the way things really are); we should actively pursue 'those states of consciousness that might be associated with a post-mortem or extrasomatic state of being'; and we should try to 'incorporate survival research and parapsychological research into a larger pursuit of human potential.'

It is the first proposal, broadening the database, to which Grosso gives the most extended consideration. He thinks that we would benefit from seriously studying such phenomena as the 'hag'; mystical, visionary and shamanic experiences; UFOs, alien contacts and alien abductions; bigfoot and other cryptozoological phenomena; Marian visions; and the physical phenomena of mediums and mystics. Now some of these phenomena (e.g., shamanism, the physical phenomena of mediumship) are already an accepted part of parapsychology. But with regard to the others, whilst it would be going too far to deny that we should keep half an eye on them, it is hard to convince oneself that investigating them would result in any resolution of dilemmas over the evidence for survival or over parapsychology itself. The phenomena concerned are mostly as elusive and frustrating as parapsychological or survival-related ones, and probably more so, and the quality of the evidence is often not good. It is, of course, easy enough to speculate that paranormal human faculties, manifesting in, say, the construction of collective or recurrent hallucinations, may enter into imagined alien contacts or encounters with fabulous animals, but so far as I am aware the evidence for this is exceedingly slight, and not to be compared in quantity or quality with the evidence that psychical researchers have gathered for collectively perceived apparitions. Such speculations will resolve no dilemmas and may pointlessly burden parapsychology with some uncomfortable bedfellows. Oddly enough, the unequivocal discovery of an actual bigfoot, or of a crashed UFO with occupants, might well (though seriously denting the hallucination plus ESP theories) have interesting consequences for parapsychology. The arguments that have been used to dismiss the testimony in favour of these and related phenomena are very similar to those used against the testimony in favour of parapsychological phenomena, particularly spontaneous ones, and a conclusive practical demonstration that the arguments were at fault in the former cases might undermine them for the latter cases too.

The second prescriptive paper is by Eugene Taylor, who has a powerful, indeed emotive, message. At times I felt myself on the edge of grasping it, at other times not. However, certain themes stand out. A central one seems to be that parapsychological phenomena are most readily obtained not by pursuing them *per se*, but as by-products of exercises in self-development and self-realisation, these exercises being principally of kinds developed in the Orient 'to effect an internal opening of the doors of perception'. The altered states of consciousness thereby induced may even teach us something of the experience of dying. Laboratory psychology and laboratory parapsychology have little or nothing to contribute to this endeavour. Such states of mind far transcend our descriptive and

conceptual abilities, and attempts to articulate them will not be assisted by any amount of conventional scientific data-gathering. What remains unclear in all this is why Taylor thinks we should take at face value the claims of certain ascetics, practitioners of Zen, religious devotees, and so forth, to have achieved self-knowledge, self-realisation, enlightenment, or whatever it may be called. Why should we not suppose (as many would) that the enlightenment and self-knowledge are delusory, a neurochemically generated anodyne for the miseries and uncertainties of existence? Taylor does not even support his position (insofar as it would be supported) by a review of whatever evidence there may be that progress along the road to enlightenment is indeed accompanied by the development of paranormal powers.

The mainly defensive paper is Robert Almeder's reply to criticism expressed by Beloff in a review of Almeder's recent book on survival (Almeder, 1992), and is too variegated and ad hoc for useful summary or comment. This leaves us with the three mainly theoretical papers, by William Roll, John Palmer and Stephen Braude.

Roll's paper moves at a highly abstract and figurative level, and is not always easy to follow. He holds that one's psyche or self enfolds or incorporates people and things to whom one is psychologically close, leading to the possibility of ESP and PK. It is embodied, both in one's own body and, because one's psyche incorporates other psyches, in other bodies too. This embodiment leads to extrasensory experiences of the crises of others. The psyche is also emplaced, in that the places where one is and has been become part of oneself, and one's memories may in some obscure way become located there and accessible to those likewise emplaced. After one's bodily death one's psyche may in a sense survive, because it is multiply embodied and multiply emplaced. One's small consciousness becomes absorbed in a larger consciousness. Roll confines himself largely to a statement of his position. He gives hardly any data or arguments in support of it. Apparently the interested reader must locate these for him- or herself in Roll's previous publications.

John Palmer's paper is the most ambitious in the book. It attempts the first outline of a 'general theory of survival'. So much hard thought and so much ingenuity have gone into this theory that I almost regretted my inability to believe a word of it. The central concept is that of a 'psiad', and I shall outline first the concept of psiad per se, and then its attempted applications to parapsychological phenomena.

Each momentary brain-state of sufficient intensity generates a persisting entity that Palmer terms a psiad. Psiads are records or reflections of the brain-states, or of those aspects of them in virtue of which they constitute integrated preconsious thoughts, images, etc. Psiads are 'embedded in' consciousness, but are not themselves conscious.

What follows is to say the least obscure, and I am not sure that I have understood Palmer correctly, or that what he says is altogether coherent. He is prepared to allow that the brain (conceived on the analogy of a computer) can, without requiring consciousness, carry out such 'mental' functions as perception, sequential thought, memory, and initiation of behaviour. Consciousness, whatever its relationship to the brain, is not a brain function. However in Palmer's theory it seems in and of itself to be not the onwardly flowing and richly differentiated stream that we would normally understand by the term, but a sort of undifferentiated potential for moments of more specific awareness. It is through psiads, embedded as they are in consciousness, and suffused by it, that this potential is realised.

As soon as a psiad is formed, it immediately and reflexly applies a psychokinetic input to the brain location or circuitry or on-going pattern of activity that most closely resembles the pattern encoded in it. This will normally be the activated brain-circuitry that has just given rise to it. If conditions are right, the psiad is now (for no very clear reasons) able to 'actualise itself as a conscious experience'. It then suffers a diminution in its 'intensity coding'

and becomes less likely to be able to actualise itself in future both because of this diminution and because the brain state will have moved on. It will, however, continue to seek actualisation (this being the nature of psiads), and if it lights upon a brain-state with sufficient similarity to its own encoded pattern, the result will most probably be a spontaneous memory experience.

So far 'psiad' seems to be a metaphysical notion, kin to 'eidolon' or 'monad', rather than a scientific one. Psiads are purportedly among the furniture of the universe or of some universe, and yet there is nothing whatever that we can do to observe them or test for their presence. Even as a metaphysical notion the concept seems to lack elegance. Each psiad would have to encode a vastly complex pattern (one has only to look at a few PET scans to realise that half the brain or more may be activated during quite commonplace experiences) and every individual on the planet would generate hundreds of psiads every hour. This is multiplication of entities with a vengeance! And even so there are all sorts of lacunae. If two, or a dozen, or more, of these psiads successively actualise themselves in experience through interaction with a certain person's brain, what makes those experiences *his* experiences? It is psiads, not brains, that become conscious, indeed seek conscious actualisation, and *ex hypothesi* psiads do not directly interact with each other, much less combine into selves. And why should the psychokinetic influence exercised by a psiad on brain circuitry lead to consciousness for the psiad rather than for the brain?

One could go on and on; but it will be as well to turn to the area in which Palmer undoubtedly does think that the theory provides genuine explanations and predictions, the area, namely, of paranormal phenomena, including survival-related ones. It is here that Palmer is at his most ingenious. Telepathy occurs when recently generated psiads interact with brains other than their brain of origin, which they will tend to do in proportion as the generating brain-state, and hence the pattern encoded in the psiad, is (in some undefined way) similar to the target brain-state (Palmer seems to hold that the mental 'space' that psiads inhabit lacks spatial dimensions so the issue of spatial proximity does not arise). Telepathy should be particularly prevalent between individuals who are genetically close to each other, because their brain states are likely to be similar. Clairvoyance does not exist as a distinct form of psi, but precognition may be possible insofar as psiads may be independent of time as well as of space. Post-mortem psi is easily fitted in. Psiads, once generated, do not depend on the continued existence of the brain that generated them. Even after the death of that brain, they may be able to interact with the brain of a medium, which may for various reasons be specially labile to their influence, and since psiads contain the encoded body concepts of their originators, they may enable the medium to mimic the communicator's voice and mannerisms. In crisis apparitions, psiads from the agent, rendered especially intense by the crisis and incorporating the agent's body concept, interact with the percipient's brain to produce an hallucination of the agent. Haunting apparitions are brought about because the brains of percipients in certain locations become similar to the brains, and hence to the still existing psiads, of the deceased persons who once dwelt there. Collective percipience is the result of psiads interacting simultaneously or in quick succession with multiple percipients. Cases of ostensible reincarnation may be handled pretty much like cases of mental mediumship, except that we need to throw in some reason (to do no doubt with similarity of brain structure) why the psiads from the past interact only with one particular still living brain. We can explain the further correct 'memories' that the present personality may come up with when brought to the previous personality's home and habitat by supposing that 'the perceptions of the new environment bring his or her brain states into conformance with the brain states recorded in the previous personality's psiads'. The transfer of skills to the child may be explained in part 'by proposing that the psiads seek out children

who possess strong innate aptitudes for the skill in question, another basis for brain state similarity'. And so on.

Do these examples show that the theory of psiads, contrary to what I said about it earlier, actually has genuine, testable applications to certain sorts of phenomena? On the whole I fear not. What we have here is in effect a theory of telepathy as an inductive phenomenon. According to such theories, telepathy consists of the induction in brain/mind B of a state similar to that which prevails (or has prevailed or even will prevail) in brain/mind A. All inductive theories of telepathy suffer from certain intractable problems, for example the obvious fact that many alleged examples of spontaneous telepathy do not involve B's mind-state being similar to A's (as in crisis apparitions in which the presumed agent may be suffering his death agonies, while the percipient sees the externalised figure of the agent, something that the agent himself has never observed). However the immediate point is that the theory of psiads does not seem to differ significantly in its predictions from those that might, with a very little ingenuity and fine tuning, be derived from any other inductive theory (for instance Sheldrake's theory of morphic resonance) or from a generic theory of the same kind. For example Palmer says that it is 'an empirical prediction of the theory' that persons with marked telepathic abilities should have very rich experiential lives (p. 13). This is because 'telepathic' brains will be ductile brains, open to the influence of psiads from other brains, and hence very receptive also to their own psiads. But a ductile brain would fit very happily into any inductive theory whatever. The metaphysical apparatus of psiads appears quite unnecessary to such a theory's (rather modest) explanatory power.

The third theoretical paper is an examination by Stephen Braude of the well-known case of Uttara-Sharada, which he treats as a candidate-case of reincarnation. He hopes to persuade us that we can best understand this case as an instance of 'dissociation + psi' or of 'motivated psi', and clearly thinks that his arguments will have wider applicability. Uttara, it will be remembered, is an Indian lady, living in Nagpur, who in her early 30s began to have phases in which she spoke and acted as Sharada, a young married woman from the West Bengal of the early nineteenth century (West Bengal is some 500 miles from Nagpur, and Uttara had never been there). She was fluent in (a somewhat archaic) Bengali, a language with which she had at best an exceedingly limited ordinary acquaintance, and showed considerable knowledge of people and places from the West Bengal of 1810-1830.

Braude does not directly tackle the question of the limits of psi (or 'super-psi'). His arguments about the Uttara-Sharada case may be summarised as follows:

1. Previous accounts of the case have neglected 'depth-psychological issues'. Uttara had in fact significant emotional problems and frustrations (of which, mercifully, Braude gives us a common-sense rather than a depth-psychological account). She exhibited various minor pathological symptoms, and showed a number of the characteristics of the 'gifted fantasiser'.

2. All this makes it plausible to suppose that Uttara developed the Sharada personality as a way of coping with and expressing these problems and frustrations, in short as a 'dissociative defence' like the alters in more commonplace cases of multiple personality disorder.

3. Dissociation may facilitate latent capacities, including psychic ones. This may help account for the knowledge that Uttara (as Sharada) displayed of Sharada's Bengali background. There are also motivational influences on ESP performance, and the motivations that underlie the creation of dissociative defences may also promote the acquisition of extrasensory knowledge.

4. There is evidence to suggest that Uttara could have had more exposure to the Bengali language than was at first apparent. If we combine this fact with the possibilities that she may have enhanced her knowledge of it through ESP, or may covertly have been a kind of linguistic savant or prodigy, we may begin to understand

her sudden emergence as a speaker of fluent Bengali.

There can be few greater admirers than I of Stephen Braude's analytic gifts, and few persons more averse to the thought of reincarnation. But I must confess that I find these arguments more than a little baffling. There is nothing new about the dissociation + psi account of mediumistic and related phenomena. It was central to F.W.H. Myers's thinking, and he held that the psi, though usually involving telepathy with the living, might occasionally involve telepathy with the discarnate. There is no need to engage in depth psychological analysis to demonstrate that Sharada is a dissociated phase of Uttara. If the hypothesis of possession be ruled out (and Braude does not even consider it), Sharada is that by definition—Braude's definition (Braude, 1991, p.120), which seems to me the most satisfactory yet. Of course in terms of this definition (which emphasises phenomenological or amnesic or anaesthetic barriers between two occurrent or dispositional states or systems of states of the same individual person) all sorts of radically different states might qualify as 'dissociated'—e.g., alcoholic blackouts, states of REM sleep behavioural disorder, alter personalities in cases of multiple personality disorder, etc. But the only serious possibility in the present case (although the fit is far from perfect) is that Sharada is a secondary or alter personality of Uttara's. Now this fact, if fact it be, has no special bearing on the question of whether the Sharada phase is an imaginative construct of Uttara's, eked out, perhaps, with extrasensory information (the dissociation + psi hypothesis), or a remembering and reliving by Uttara of her previous incarnation as Sharada (which would be a sort of dissociation + cryptomnesia hypothesis). Presumably someone who is going to escape from the miseries of dissatisfactions of life by creating an alter personality may utilise any imaginatively interesting materials that happen to become accessible, including all sorts of buried memories, even those of past incarnations (if any).

In short it is not the dissociation part of the dissociation + psi hypothesis on which Braude should have concentrated, but the psi part. His approach to the case of Sharada will gain credibility insofar as he can show that dissociation in the form of a secondary personality, and the sorts of motivations that prompt such dissociations, are specially conducive to the exercise of extrasensory capacities; that knowledge of and facility in a foreign language may be assisted by ESP; and that Uttara can plausibly be supposed to have been, at least to an extent, a linguistic prodigy or savant. There is not a lot of evidence on any of these fronts, and none, I suspect, on some. Unless and until Braude can supply such evidence (he makes almost no attempt to do so), his dissociation + psi hypothesis is going to float in that uncomfortable limbo to which are consigned theories that no-one seriously believes, but nobody can actually dispose of.

Over a third of this book is devoted to verbatim transcripts of the discussions that followed each paper and of the four general discussions. Although there were some insightful and illuminating passages—Braude, for instance, seemed to me to raise about several papers exactly the points that needed to be raised, whilst Roll's account on pp. 118-9 of one of his own OBEs is of some theoretical interest—I wondered whether the expense of printing these transcripts was really worthwhile, especially when they might have been replaced by another couple of papers. Few even of the most articulate can really enjoy seeing their off-the-cuff remarks served up before them in cold print several years later.

Looking back on this book, I realise somewhat guiltily that, setting aside the two largely factual papers, I have found very little in it that I could accept without qualification, and much with which I rather strongly disagree. To disagree with the contents of a book, however, is not necessarily to criticise the book itself. Agreement in this debatable area, is a rare luxury. One has more often to settle for the salutary, and just possibly profitable, discipline of trying to be clear about the grounds for

one's disagreements. A book lively enough to stimulate dissent has its own kind of value, a value that will probably be different for each dissenting reader.

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Book Review:
Blindness of Modern Science

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A Review of *Blindness of Modern Science* by Undo Uus. Tartu, Estonia 1994. ISBN 9985-60-064-9. No price. 508pp.

This is not a book about parapsychology. However, many parapsychologists will sympathise with its author who, though himself a scientist, indeed an astronomer, has become so exasperated by the refusal of orthodox scientists to acknowledge what he calls mental, as opposed to physical, reality that he has produced this lengthy diatribe and in a language, English, that is not his own.

The author told me that he could have included references to the paranormal as a further example of the blindness of his colleagues but, wisely, I consider, in the circumstances, decided to concentrate on those aspects of the mind that are less contentious. His plan is to consider certain universally recognised features of mind and then to argue that these are irreconcilable with a physicalist analysis. He then seeks to show that modern science either ignores their existence or, in the case of cognitive psychology or Artificial Intelligence research, offer a spurious account of them.

What, then, are these mental phenomena that, the author claims, defy any possible physicalistic or behaviouristic analysis? As an avowed dualist-interactionist of a strong persuasion his list is formidable. For starters, he asks us to consider the subjective-qualitative content of consciousness or what philosophers have called the 'qualia'. More boldly he then invokes volitional experiences and argues that free-will is no less a datum of experience than the qualia themselves. From there he moves on to personal identity and what it is that makes us one and the same self through all the varied changes of our bodily existence. He concludes that 'intrinsic diachronic personal identity cannot be reduced to bodily and psychological continuities'. In short, each of us, in the final analysis, is an immaterial soul. This immaterial soul cannot be equated with the brain and there is no reason why it must necessarily cease to exist with the dissolution of the brain and body at death.

Why then, if such facts are as transparently clear as the author believes, has the modern materialistic scientific world view taken hold of us to such an extent as to monopolise the prevailing outlook? The penultimate chapter addresses this question and various answers are suggested. There is, first, the contrast between the well defined concepts that science offers and the 'intersubjective incommunicability' that pertain to our private mental life. Then we must reckon with the human desire for firmly based knowledge and absolute truths that the hard sciences purport to offer. Nor should we forget the huge technological advances that science has made possible. Nevertheless, we should, pleads the author, refuse to be seduced by these new high-priests of modern civilisation and instead look inward for the clues to our own intrinsic nature and identity.

As a fellow-dualist, this reviewer cannot but applaud the stance that the author has taken even if I would be far more tentative about the claims that I would be prepared to defend. It is, after all, not just the scientists who propagate a physicalist metaphysic; there is, as the author is well aware, a formidable battery of philosophers to give them conceptual backing. It is, however, encouraging to have a scientist

such as the author to disabuse us of the prevailing scientific orthodoxy. Whether his campaign will succeed in denting the self-assurance of the scientific establishment is another matter. The prevailing ethos, as he makes clear, is to regard the brain as everything, the mind as, at best, an epiphenomenon.

And this brings me back to the question of the paranormal. Parapsychology tries, in effect, to beat orthodoxy at its own game. That is to say, it seeks to demonstrate objectively facts that defy an orthodox analysis. If progress is sustained, it is a challenge that orthodox science may no longer be able to evade.

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Book Review: *Actas del Primer Encuentro Psi 1994: Nuevas Dimensiones en Parapsicologia [Proceedings of the first Encounter Psi 1994: New Dimensions in Parapsychology]*

Alejandro Parra
Centro Integrado de Estudos e Pesquisas do Homen, Brazil

A review of Proceedings published by Institute of Paranormal Psychology: Buenos Aires, 1994. Pp.70 [U$ 10].

The first *Encounter Psi 1994: New Dimensions in Parapsychology* of the Institute of Paranormal Psychology (IPP) was held at its headquarters in Buenos Aires, Argentina, on Saturday, 5 November 1994, consisted of Alejandro Parra (Editor of *Revista Argentina de Psicologia Paranormal*) and Jorge Villanueva (Director of the Institute). This meeting planned to cover several aspects about parapsychological research in Argentina and the situation of parapsychology around the world. Proceedings of the meeting were distributed among the participants during the meeting. I will briefly review the Procedings in order to show what kind of papers were presented.

President of the Laboratorio de Inevstigaciones Parasensoriales [Laboratory of Parasensorial Research], psychologist Oscar Barros Barbeito presented a paper about the application of dermo-optical perception of colour. A group of subjects (adults, some of them blind) were tested for dermo-optical perception with a battery of tests to evaluate psycho- socio-cultural characteristics. Targets were presented at random, and consisted of a Max Luscher colour set (30 pictures) with monochrome and colour pictures, with which the best results were obtained for those offering better contrast. Juan Carlos Russo, dowser and member of the board of directors of the Sociedad Argentina de Radiestesia [Argentine Society of Dowsers], studied radiesthesic perception, isolated from any parapsychological manifestation because the psychophysiological reaction was separated from the anomalous detection, as much as possible. Walter Gardini presented a historical paper about psi phenomena in India and its literature, such as the Yoga Aphorism of Patanjali. In his opinion, four conclusions can be reached: (a) psi exists, it is valid, efficent and important; (b) some refer to spiritual development; (c) others may find deception, sleight-of-hand and tricks; and (d) in the origin of psi phenomena there are psychophysical as well as trascendental causes.

Ivan Lepes is a member of the Instituto Argentino de Parapsicologia [Argentine Institute of Parapsychology]. In his paper "Entomology and parapsychology: an experiment with the drosophila melanogaster fly" , he used selected flies showing psi ability. "Sender" flies had access to abundant food, this being associated with either a light or dark condition. "Receiver" flies had to choose between light or dark in search for food. The posibility of EM transmission was tested by doing experiments at 5 metres. and a 1,000 metres. The results were significant.

A prestigious Argentinian physician, Dr. Samuel Tarnopolsky, summarized his personal experience concerning whether rural healers cure and in any case, what is the mechanism of the healing process. Tarnopolsky added the placebo effect and

the conditional reflex, and gave a large bibliography.

Referring to parapsychology in the context of psychology, Hector del Valle introduced parapsychological studies of several psychologists, such as Gustav Fechner, Pierre Janet, William James, Gardner Murphy, among others, including several Argentinian psychologists involved in the field of parapsychology. Psychologist Daniel E. Gomez Montanelli, editor of the spiritist journal *Ciencias del Espiritu*, considered in his paper "extracerebral memory and cases suggestive of reincarnation". Further studies had been carried out by Ian Stevenson (in US), Hemendra Nat Banerjee (in India), and Hernani Guimaraes Andrade (in Brasil), about subjects remembering past lives. In the opinion of Gomez Montanelli, the study of possible reincarnation cases is among the most difficult in parapsychology. To produce a systematic methodology for this type of investigation is a constant preoccupation. Alternative hypotheses may also considered, namely, deliberate fraud, pseudomemory, genetic memory, ESP or Super-ESP, and finally, reincarnation.

Marcelo di Tullio and Juan Gimeno, in the field of survival research, introduced a transcommunication technique as an anomaly to be explained. It would also include effects produced over fax machines, computers, TV sets, or any electronic equipment. Like the grand phenomena of the past, interpretations range from absolute skepticism, to the construction of a new paradigm that answers more questions than the present one about life after death.

I introduced a further report about a multivariate analysis of a clairvoyance session. A single session between a clairvoyant and a "client" (a volunteer) was studied and analysed in an attempt to explain the phenomena taking place in such an interaction. The psychic and the "client" each carried a cardiac monitor, and a battery of psychological tests were used to obtain a psychodiagnosis of both subjects. More research of this nature is needed to elaborate a better procedure and to further confirm the unconscious character of psi function.

Alejandro Parra gave an up-to-date survey of parapsychological activity around the world. He mentioned new techniques that have reinforced scientific proof of ESP/PK processes, meta-analysis, micro-PK, and bio-PK effect, using bio-PK in self-healing and medicine in general. International communication, and new avenues in the study of survival research were also covered. Finally, Jorge Villanueva spoke about Jose Fernandez, who was a pioneer in Argentinian parapsychology who deserves our tribute.

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Notice:
The Institute of Paranormal Psychology

Paranormal psychology is the study of apparent anomalies of behaviour that are thought to exist apart from currently known explanatory mechanism that ordinarily account for organism-enviroment and the organism-organism information and influence flow. The Institute of Paranormal Psychology (IPP) is an educational centre dedicated to the scientific study of parapsychology. The scope of our Institute is the collection, classification and publication of reports dealing with ESP and PK phenomena (and other related topics), the maintenance of a library of psychical research and an experimental laboratory. Our purpose is to reach both the general public and parapsychological researchers in the hope of presenting serious information about the field. The IPP is divided into three areas:

(a) Educational area: The first program is basic parapsychology, which is a comprehensive introduction to the field aimed at college students and teachers. The second program is advanced parapsychology aimed at research professionals and scientists. Over 30 lectures and hands-on workshops by IPP staff emphasize both experimental and theoretical approaches to ESP and PK. Enrolment is limited and classes are small to permit individual attention. The controversies that surround psi research and the implications of its findings for science and society are also prominent topics in the programs.

(b) Documentation area: The parapsychology library of the IPP contains several hundred books and journals in the Spanish language and non-Spanish languages, from 1900 up to present. Also, we have audio and video tapes about paranormal research, linked to ALIPsi (Latin-American Agency of Psi Information).

(c) Parapsychological press area: The work of the IPP is supported by the pupils' fees and by the income from an endowment fund. This takes care of office expenses and the cost of printing and distributing the IPP's publications, such as *the Revista Argentina de Psicologia Paranormal* [*Argentine Journal of Paranormal Psychology*].

Agencia Latino Americana de Informacion Psi

ALIPsi (Latin-American Agency of Psi Information [Agencia Latinoamericana de Informacion Psi]) is a computerized database of the literature of parapsychology in Spanish-speaking countries, and it is intended to serve as a computer databank. The data resides in a computer because ALIPsi contains the bulk of parapsychology literature in the Spanish-language journals from 1900 to date, and the best books about the field. The record of each document in ALIPsi consists of bibliographic information (author, title, source), abstracts and additional information. Also an Annual Guide to the sources is in press. We have a Bibliographical Service Center (BSS), audio and video-tapes on parapsychology, translation from English to Spanish language, index of selected institutes and associations in the field, and an advisory service for bibliographical investigations.

Revista Argentina de Psicologia Paranormal

The *Revista Argentina de Psicologia Paranormal* (*RAPP*), is a scientific journal dedicated to research in paranormal phenomenon and the study of certain meaningful coincidences of cognitive activity (ESP) and psychokinesis (PK). The *RAPP* was initiated in 1990, and is devoted mainly to publishing original reports of experimental research in parapsychology. It also publishes research reviews, theoretical works, methodological articles that are closely linked to the empirical findings in this field, book reviews, comments, national and interna-

tional news, and abstracts in English. The *RAPP* is published quaterly in January, April, July and October by the Instituto de Psicologia Paranormal [Institute of Paranormal Psychology]. The subscription rates are: individuals (U$ 25), institutional (U$ 40), students and senior citizen (U$20) (inclusive of handling and shipping).

If you are interested in an annual subscription to our journal, then please send us an international money order made out to BANCO DE CREDITO ARGENTINO (Bank of Credito Argentino) to Alejandro Parra (No. 006-501501-6) at the following address:

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Notice:
Announcement for non-Hispanic and Portuguese Parapsychologists and Call for Papers

The First Annual Convention of the Latin-American Parapsychological Association (ALPA) and Second Psi Encounter 1996: Contributions from Contemporary Psychology toward Parapsychology will be held from Friday, November 15th through Sunday, November 17th, 1996, at the Adrazi International Hotel, Capital Federal, Buenos Aires, Argentina. For information regarding registration and hotel accommodation, please contact Mr. Jorge Villanueva, Salta 2015 (1137), Capital Federal, Buenos Aires.

Anyone may submit a paper for consideration by the Program Committee. Papers may be clinical, experimental, historical, methodological, philosophical or theoretical, or may report field work or case studies. The Program Committee will NOT consider papers that have been published in Spanish prior to the Convention. All submissions must be in English, Spanish or Portuguese language.

Papers should be the equivalent of full-length journal articles and should adhere to the publication style of the *Revista Argentina de Psicologia Paranormal*. If submitted on paper, the first sheet must contain a centred title, author(s) and affiliation(s) followed by an abstract of not more than 200 words. The paper must be double-spaced, the text may not exceed 13 single-spaced pages with no more than 4 additional pages for figures, tables, and references. Four copies of each submission are required.

If submitted on disk or by electronic mail, all disk and/or electronically-submitted text must be in DOS-compatible formats, with preferred text formats being ASCII, Extended ASCII, Microsoft Word, Word Perfect, Wordstar or Xywrite. Preferred formats for figures include TIFF, GIF or EPS. In addition to papers, the program will consist of research briefs, panel discussions and workshops. The panel discussions that have been previously invited by the Program Committee include:

- The study of the spontaneous cases in Parapsychology.
- Foundations of Physical and Parapsychological Phenomena.
- Advances in Neurophysiology Research and the Structure of ESP.
- Pop Parapsychology "versus" Scientific Parapsychology: Parapsychologists in the Mass Media.
- Parapsychology in the Ibero-American Countries: An uptodated report.

The deadline for the receipt of all submissions is Sunday, September 1st, 1996. This is a very hard deadline to allow for the preparation of the Proceedings of Presented Papers. All submissions and other correspondence related to the program should be sent to:

Alejandro Parra
Program Chairman
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Si, adjunto la suma de U$ ..... girado al BANCO DE CREDITO ARGENTINO a nombre de Alejandro Parra (No.006-501501/6) para mi inscripcion en el Segundo Encuentro Psi 1996: Aportes de la Psicologia Moderna a la Parapsicologia y Primer Encuentro Iberoamericano de Parapsicologia.

COSTOS POR HABITACION (por dia)	U$ 65 (doble) U$40 (simple)
INSCRIPCION AL ENCUENTRO (incluye las Actas)	U$ 50
COMIDA (solamente en el Hotel Adrazi)	@ U$ 10

Por favor, un formulario por participante:

Nombre y Apellido: _____

Direccion: _____

Ciudad: _____ Provincia: _____

Telefono: (.....) ..... Fecha: _____/_____/_____

Firma:

Formas y Sistemas de Pago

Toda persona interesada en participar del Encuentro debe hacer su reserva a partir del 1ro. de Octubre. Las formas de pago desde el exterior pueden efectuarse a traves de un giro bancario internacional a nombre de Alejandro Parra al BANCO DE CREDITO ARGENTINO solo en dolares a la cuenta No. 006-501501/6 para residentes fuera de Argentina, la cual debe contener el valor de la inscripcion al Encuentro (U$ 50), mas el 50% por adelantado para la reserva de la habitacion. Por el momento, no se aceptaran tarjetas de credito.

Notice:
International Award Gastone De Boni

Fondazione Biblioteca Bozzano De Boni
Via Guglielmo Marconi, 8 - 40122 Bologna

For the year 1996 the Fondazione Biblioteca Bozzano De Boni (Foundation Library Bozzano De Boni) is running a prize competition in memory of Dr Gastone De Boni (*Luce e Ombra*'s late editor) for unpublished articles about Psychical Research.

For the competition a

$ 1.000,-

premium is reserved for typescripts by a non-Italian author.

Works submitted for the award have to be unpublished in English or French, having a length of not less than 10 but no more than 30 typed and double-spaced pages.

The papers must be sent to FONDAZIONE BIBLIOTECA BOZZANO DE BONI - Via Guglielmo Marconi, 8 - I40122 BOLOGNA and must be *received* not later than December 31st 1996.

The winner will be informed by an international cable and receive the premium during the annual meeting of Riccione (March 1997) or by mail.

An Italian translation of the article will subsequently be published in *Luce e Ombra*.

Notice:
Electronic Journal for Anomalous Phenomena

http://www.psy.uva.nl/eJAP

A new electronic parapsychological journal has been established by Dick Bierman of Holland. Below is an excerpt from the journal's web page.

> The goal of *eJAP* is to provide scientifically rigorous but easily accessible information about empirical, field and theoretical research into anomalous phenomena. By anomalous phenomena we mean the phenomenon of anomalous cognition, which is also called extrasensory perception, and the phenomenon of anomalous perturbation, which is also called psychokinesis. Papers will be peer-reviewed before acceptance.
>
> In contrast with paper journals the contents of *eJAP* will increase continuously and unpredictably in a cumulative way. If you want to be informed any time an article is added please email eJAP@psy.uva.nl and we will add you to the eJAP-listserver.

The aim of sensory stimulation is to favour, in the receiver, the perception of the sender's mental contents.

On the other side, the receiver is usually put in a sensory deprivation condition, in order to favour the perception of "internal" images and sensations.

Then the receiver must provide a description of one's own feelings. The responses are successively statistically analyzed using a standard but tedious procedure.

The main problem of this experimental scheme is the relative incompatibility between the relaxed - or altered - state of consciousness of the receiver and the necessity to express one's own feeling.

In this article a new technique for experimental work on telepathy is suggested. This technique is based on the simultaneous recording of electroencephalographic (EEG) signals between two subjects (sender and receiver).

In a preliminary and informal experiment, two subjects (husband and wife) were connected with two computerized EEG instruments. Six silver electrodes were placed in the frontal, temporal and occipital lobes of each subject, with reference on the earlobes.

The use of two EEG instruments guaranteed the complete independence of the EEG signals between the two subjects.

The EEG data coming from the 12 electrodes were amplified in the band 1-30Hz and simultaneously converted from analogue to digital and stored in the computer hard-disk.

The subjects were sitting in two armchairs about one meter apart with a small table between them. They were instructed to minimize muscular movements during the experiment.

After the collection of EEG basal data with open and closed eyes, the subjects started a typical mediumnistic sitting (channelling). The analysis of EEG data showed a great increase of EEG signal amplitude in one subject (a woman, 60 years old), but not in the other, during the channelling.

The most interesting result was found performing a particular analysis of the EEG data, that we have called "analysis of synchronization".

This consists in the calculus of the Pearson's correlation between two EEG signals. The result is a number r ranging from $r=+1$ (the signals are fully similar) to $r=-1$ (the signals are similar but with phase opposition). When $r=0$ the two signals are fully uncorrelated.

The synchronization value is usually $r=0.4$-0.8 between the left and right symmetrical positions of cerebral hemispheres.

Great increase in the left-right synchronization of the woman was found during channelling ($r=0.95$), but a particularly interesting and unexpected result was obtained from the calculus of the synchronization between the two subjects (cross-synchro). During the last 10 minutes of channelling, a significant increase of cross-synchro ($P<<0.001$) was observed specially in the temporal lobes.

It is commonly assumed that the EEG activity of two brains is independent if they are sensorially separated. In our experiment the subjects were not sensorially separated, but a normal sensory input like seeing or listening to something does not cause a significant correlation between the two EEG activities.

We think, therefore, that a real and remarkable extrasensory interaction between two minds was observed in our experiment.

This conclusion suggests a new experimental method for the study of extrasensory communication, which allows the subjects to remain in any altered state of consciousness (relaxation, meditation, hypnosis, sleep, channelling etc.).

pp.37-53

Psychoanalytic Parapsychology: Emilio Servadio's Work

Giuseppe Perfetto

Abstract: The article summarizes the 60 years of activity in the parapsychological field by the psychoanalyst Emilio Servadio. There is the biography of Servadio and the description of his most important works. The fundamental idea that goes through the entire article is that only the hermeneutic foundation of psychoanalysis is able to give a meaning to the paranormal phenomenology.

European Journal of Parapsychology
1996, Vol. 12, 116-120

Abstracts:
Quaderni di Parapsicologia

Quaderni di Parapsicologia, Vol XXVI, Ottobre 1995, N. 2

Internet News: CSP "on-line"

B. Severi - L. Taruffi

Abstract: As well as other important Parapsychological Associations, the CSP has entered the Internet. Such an initiative has been promoted by Luigi Taruffi of the CSP Board and by the Vice President Bruno Severi. Their aim was to allow the CSP to be known in a world-wide dimension. To this end, they have introduced on the Internet a document explaining what the CSP is, which fields are under investigation, and which are the scientific, philosophical and methodological approaches employed. There is a second aim that the two promoters wish to reach: knowing what the other researchers of the paranormal are at present doing inside this international infomatic web. The first investigation into the Internet disclosed a very rich and astonishing world dealing with the paranormal. Another of their main purposes is to inform CSP members of the most interesting findings which they meet in this new and everchanging reality. It's clear that many other suggestive features and data may emerge from this exploration which, up to now, appears almost endless.

pp.5-8

The Role of Spontaneous Cases in Modern Parapsychology

Carlos Alvarado

Abstract: The author emphasizes that case studies in parapsychology are important for at least three reasons. First, this line of research forces us to pay attention to people's spontaneous experiences, which are unfortunately neglected in the modern research literature on the subject. As a consequence, we will be more aware than we are now of the human and social relevance of our field. Second, it confronts us with the fact that there are areas and characteristics of psi that cannot be studied in any other way. In fact, the very characteristics of the phenomena demand approaches other than the experimental studies that predominate in our field today. Third, case studies remind us that psi phenomena are too complex and have too many dimensions to be constrained exclusively by the experimental method or solely by the parameters of case studies. Our science needs both the exactness and rigorous hypothesis testing of experimental work, as well as the more expansive and contextually sensitive methodologies of the social and behavioural sciences. Parapsychology must understand the value and necessity of pluralistic approaches to the study of psi phenomena which, after all, occur both in life and in the laboratory.

pp.9-38

Synchronicity and Channelling

William Giroldini

Abstract: In classical telepathy research, a subject - the receiver - is placed in a relaxed state (e.g., the ganzfeld) while another person - the sender - is subjected to a strong sensory stimulation using audio-visual media.

Starting from Freud's original intuitions, Servadio examines carefully the developmental aspect of psi faculties, coming to the conclusion that ESP is a regressive psychic function, an expression of an archaic form of communication. ESP presents itself as a primitive form of interaction between psychisms, inside highly emotive interpersonal relations; this regressiveness is also demonstrated by its production in the analytic situation. The condition that allows paranormal phenomena (particularly telepathy) to arise is a common regressive tendency that tends to reduce their individuation-separation. Telepathy is promoted by frustration. The unconscious motivation of ESP is the separation anguish that is lived as a loss of the object and of the Self. ESP is an unconscious, structurized process. In fact, the psi information undergoes the effects of deformational mechanism and it is in the atemporal and aspatial of the id that clairvoyant and precognitive phenomena occur. Finally, there are three known cases of spontaneous paranormal phenomena analysed by the psychoanalytic method.

pp.54-79

Parapsychodrama: A Humanistic Method for Parapsychological Research

Lorenzo Ostuni

Abstract: Parapsychodrama is a humanistic method for parapsychological research, invented by Lorenzo Ostuni and his collaborators at the beginning of the 1970's in Rome.

This method provides the use of a "parapsychotest" (which is referred to as the *Chimeras*; the test consists of ninety-nine symbolic images and the same number of explanatory texts) and of a group of mimers. These *mimer/mediums* accomplish a clairvoyant performance which has a high content of ESP.

The parapsychotest and the mime are such that they "stage" or dramatize the biography of someone who is utterly unknown to the participants.

The event reaches a climax when the psychic/analyst (Lorenzo Ostuni) interprets in biographical terms varous episodes, feelings, attitudes and defining characteristics of the subject.

Parapsychodrama flows into the "parapsychogramme"; that is, the biographical story-telling of a subject not known beforehand, and either absent or present at the experiment.

In Rome, Milan and the Esalen Institute in California (1970-1995) more than two thousand parapsychodramas have been carried out, with a notable parapsychological content.

pp.80-90

New Dimensions in Parapsychology: A National and International Perspective

Alejandro Parra

Abstract: This paper can be divided into several distinct parts dealing with the present status of parapsychology all over the world. The first one shows the most important trends of parapsychological research during these last years. The new fields which appear particularly promising in the author's opinion are: meta-analysis, the ganzfeld, micro-PK and bio-PK and its possible relationship with geomagnetic activity. Each of them are briefly described and discussed. The second part is a reflection on the social impact which parapsychology has at different levels. It covers the problems of CSICOP, of the international ways of communication among parapsychologists, the difficulties connected with the language barrier and the influence of the belief in paranormal phenomena in society. In the third part there is a wide survey of the parapsychological situation in those countries where the paranormal is mainly investigated. The most representative centers, journals, researchers and activity of each of these countries are described. Lastly, the future of parapsychology is taken into consideration and discussed.

pp.91-103

Quarderni di Parapsicologia, Vol XXVII, Marzo 1996, N. 1

Ayahuasca: Medicine of the Soul

Bruno Severi

Abstract: In this paper the author presents his direct experience with Ayahuasca, an hallucinogenic plant brew employed by Shamans of the tropical rain forests of South America. This drug is commonly thought to be able to bring people into contact with "another" reality from which both practical and spiritual teachings can be obtained. Discovering how this could happen was the main task of the author during a one month stay in the Peruvian forest. After many disappointing and discouraging results, the author decided to try Ayahuasca one more time before returning home. During this last sitting, which lasted the entire night, the author succeeded in retrieving a great deal of teachings, but in an unexpected and very complex way. On the whole, this experience subjectively looked like a true initiation process which appeared to be (telepathically?) directed by the shaman himself, even if other explanations cannot be discarded.

pp.15-29

The Dream: One of Mankind's Enigmas

Enrico Marabini

Abstract: Dreams are extraordinary events which accompany us during all our lives and they still keep their enigmas in spite of the wide scientific knowledge about them. Before analysing the psychological peculiarities of dreams, the author lingers over the complex problem of the sleep in which dreams are realized. Sleep was considered a condition of silence and rest but actually it is a condition in which the organism shows an intense activity of all the organs and a complex and singular mental experience.

An explanation of this psychical activity has been possible through the study of the bioelectric cerebral behaviour.

Among many theories the coming of EEG defines the so-called REM and NO-REM stages of sleep and dreams.

If it is true that every activity of a biological system has a purpose, as man sleeps for about 25 years of his life, we have to recognize that not only sleeping but dreaming too is a very important moment. Experience proves that by dreaming not only do we experience ourselves bodily and psychoemotionally, but we transcend them and our conscience spreads out. All that, Marabini tells us, must have a meaning particularly if we consider that on many occasions dreams acquire clear features of inner dialogue as if they were direct instruments of communication as compared both to the subject himself and to others. This conceptual vision is clear in the analytic setting when in the transference and subsequently in the countertransference. We witness the establishment of a prelogical dialogue between the patient's and the analyst's unconscious likewise a phenomenon of "psi interaction".

After having mentioned the different explanatory theories about dreams, the author dwells upon telepathic, clairvoyant and premonitory dreams, explaining them with a rich casuistry. These events show the interference of the "psi function" in man's mental life. But, which is the nucleus that organizes these events? The central element of the psyche, which elaborates messages, Marabini tells us, is the conscience or the I. That is a confirmation that the conscience is able to operate in the immeasurable spaces of the personal and collective unconscious. Beside on particular occasions, even if the subject is not aware, the conscience is able to space in the intra-mundane up to a different dominion of reality carrying out a relation with the Universe and sometimes with the dominion of the Transpersonal.

pp.30-44

The *Bardo Tödöl*, its Sources and Contemporary Science

Sergio Bernardi

Abstract: The author here describes the deep meaning of the "Bardo Tödöl", known in the western countries as "The Tibetan Book of the Dead", whose knowledge is a means of allowing the dying person to recognize his true nature and to identify it with the eternal consciousness. After this process has succeeded as a consequence of the instructions of the *lama*, the person can achieve his spiritual freedom being ridded of his *karma*. This Tibetan book is directly connected to the most important oriental spiritual traditions, in particular with the *Yoga*. It is also reported as some western mystical traditions are indebted to the Indian thought in which the author recognizes many important intuitions rediscovered during this last century by the western science both in the physical and in the psychological fields. In addition, some phenomena which occurred to the Indian and Tibetan ascetics during their hard introspective training are just those which are now studied by modern parapsychology. Finally, the author analyzes the main and fundamental features of the process of spiritual growth in the light of what we know from the religious, anthropological and psychological point of view.

pp.45-52

C.S.P. On-Line

B. Severi - L. Taruffi

Abstract: The authors present a list of Internet addresses where the readers can find a number of documents regarding the different fields of Parapsychology. Anybody interested in the paranormal will surely find a rich resource useful to isolate any specific concern.

pp.82-84

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Abstracts: *Zeitschrift für Parapsychologie und Grenzgebiete der Psychologie*

Zeitschrift für Parapsychologie und Grenzgebiete der Psychologie
Jahrgang 37, Nr. 1/2, 1995

The Strength of Gauquelin's Planetary Effect: Arno Müller's Review is in Need of Correction

Suitbert Ertel

Abstract: Müller's unfavourable review of research on Gauquelin's profession hypothesis (Müller, 1994) is based on untenable premises. He wrongly assumes that planetary effects might have been produced by Gauquelin's biased selection of biographical reference sources. Equally untenable, on logical and empirical grounds, is his idea that Gauquelin might have suppressed high eminent birth cases associated with unfavorable planetary positions thus giving rise to spurious eminence correlations. It is conceded that Gauquelin was biased when he excluded from analysis low eminent cases after having inspected their planetary positions. But he thereby merely boosted existing planetary effects, he did not create them. His bias even lowered the eminence correlations. Müller's seemingly paradoxical results obtained from birth data of exceptionally eminent men and women (planetary sector frequencies went down instead of up) do not weaken Gauquelin's basic claim, they are sufficiently explained by curvilinear eminence correlations. New evidence is provided showing that G-sector deviations in fact generally drop at highest eminence levels. Müller maintains that planetary effects that cannot be done away with as bias effects might eventually be seen as diurnal-seasonal effects on birth distributions. But this assumption is empirically unfounded. The present author cluster analysed the Gauquelin professions each defined by planetary birth frequency deviations. A hierarchical order of human cultural activities emerged, which defies Müller's reductionist view of Gauquelin's results; their challenge remains unabated.

pp.3-27

Osbert Sitwell and the Ghosts

Wilhelm Gauger

Abstract: Sir Osbert Sitwell (1892-1969), the brother of Dame Edith Sitwell and Sacheverell Sitwell is well-known as a poet, writer of fiction, journalist, pacifist and man of society. Even as a child growing up in the family seat of Renishaw he came into contact with paranormal phenomena, especially "ghosts", witness the mentionings in his five-volume autobiography *Left Hand, Right Hand!*. We also find in him a sense of coincidence and fate. Besides his personal experiences and those of others mentioned by him his ghost stories are discussed here. A pervading attitude of acceptance can be found throughout, but no system or theory; and his utterances also tend to irony and reserve. His fictional events are founded in experience, and there is no clear-cut borderline in themes and structure between experience and fiction.

pp.32-54

"Ideoplastic Ability" - On Thomas Mann's Essay "Okkulte Erlebnisse" [Occult Experiences] and the Problem of how to Deal with Paranormal Realities in a Literary Way

Franz Orlik

Abstract: The end of the First World War brought with it for the culture and society of imperial Germany a period of widespread disorientation. Societal structures formerly judged as "aere perennius" were becoming invalid, as were received philosophical certainties and central aesthetic categories. In the midst of such upheavals stood Thomas Mann, the eminent German writer, feeling how the fundamentals of his personal and literary "constitution" and thereby those of his productivity as a writer in general were becoming shaky. His productivity was connected with Schopenhauer's speculative metaphysics and its concept of the world as will and idea. A first attempt to regain a workable ideological foundation enabling literary productivity can be seen in Thomas Mann's "idyllic" novel *Herr und Hund [Master and Dog]* published immediately after the end of the war. Here the author includes the concept of nature, formerly considered as "illiterate" in the material for his novel. It is, however, symptomatic for Mann's way of dealing with nature that now, with the failure of Schopenhauer's metaphysical scheme to integrate reality in its totality, there remain unsolvable paradoxes in the presentation of action, which make the content of the action appear as "alien and peculiar". In the winter of 1922/23, Thomas Mann faced a further challenge of his literary ability when he attended mediumistic séances, the experiences of which he set down in his essay *Okkulte Erlebnisse [Occult Experiences]*. At first sight, Thomas Mann's approach toward his subject matter is purely descriptive, but later he underlined the necessity of an "empirical-experimental metaphysics" to analyse transcendental realms in the light of rational knowledge. In the end he feels compelled to develop his own explanatory schemes and to explain the medium's activity in terms of an "ideoplastic ability", with the help of which a "figment of the world of dreams can objectify itself and can become real before the eyes of other people" - an ability which, mutatis mutandis, lies behind all artistic performances.

pp.55-72

"Arm Chairs are Being Moved" - Spiritism and the Emphatic Modern Age: Regarding a Footnote in the work of Wassily Kandinsky

Moritz Baßler

Abstract: In his programmatic work *Über das Geistige in der Kunst [On the Spiritual in Art]* Wassily Kandinsky refers to a number of eminent scientists in the late 19th Century who were interested in the phenomena of spiritualism and tried to investigate such phenomena using as a model the positivistic science of the time. In the eyes of these researchers the reality of the phenomena in question could be established experimentally and they had explanatory hypotheses which could be formally compared to those of established science. There were certain peculiarities, however, which characterized mediumistic phenomena observed during the seances of the *Gründerzeit* (i.e. the years of rapid industrial expansion in Germany from 1871). In general, they took place in middle-class drawing rooms and they shocked not only the positivist world view but also to some extent the *Kaiser*'s moral code. Against the *fin de siècle* background the spiritistic demonstration became an anti-mechanistic manifestation and gave illustrative material for the avant-garde experiment of the emphatic modern age. Such a connection became apparent in the phenomenon of automatic writing. It stemmed from the "totally other" (which may be understood as a spiritual world "beyond" ours or as our personal unconscious mind) and was in need of an explanation. "L'écriture automatique" and similar techniques became important for many artists of the avant-garde at the beginning of this century; the direct or mediumistic inspiration formed a solid component of the way these artists looked upon their own artistic program.

pp.73-89

The zar Cult in Egypt - Disease and Possession as Signs of Spirits

Muna Nabhan

Abstract: Within the popular Islamic religion in Egypt the belief in spirits is held in high esteem. The presence of invisible beings is felt everywhere; if they are involved in close encounters with humans, such collisions go at first unrecognized, but later the persons can fall ill or become disturbed. To ascertain if a spirit is responsible for such a disease the persons in question have to go for advice to an expert. The male and female cult leaders of *zar*, a special kind of possession cult, are viewed as very experienced diagnosticians. They do not only recognize possession states but they can also transform such states, which are experienced at first as negative, into a positive contact with spirits. This can be brought about by performing a ritual for the spirits and by dancing to the chanting of their songs so that a state of trance and possession is attained. The boundary between man and spirit almost disappears so that man becomes (nearly) spirit, and spirit becomes (nearly) man.

The climax of the ritual consists in the contract between spirit and human in which their future relationship is bindingly laid down. The humans are obliged to obey the spirits and in return the demons declare their readiness to shield humans from harm and to help them master various life crises.

The most salient feature of the *zar* cult, namely that most of the adepts are female, is connected with the fact that in formal Islamic religion the reveration viz. the acknowledgement of the superiority of the spirits is felt as undermining the exclusiveness of high religion. Since women are not that much involved in the structures of Islam, it is easier for them to participate in a possession cult and in the adoration of spiritual beings. So, women have to fulfill the complementary task of ensuring the goodwill of the unpredictable and capricious spirits.

pp.90-102

Publication Policy and Instructions to Authors

The aim of the *European Journal of Parapsychology* (*EJP*) is to stimulate and enhance activity in parapsychology, especially in Europe, by communicating research results and issues related to parapsychology. To this end, *EJP* publishes original papers on a variety of topics including empirical, theoretical, historical and sociological issues. Translations of papers originally published in a language other than English are also welcome.

The *EJP* actively encourages the submission and evaluation of papers before the experimental data have been collected. The study's rationale, number of subjects and trials, hypotheses and planned statistical analyses should all be included in such submissions. Priority will be given to the publication of such studies.

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