ESP: TARGET QUALITIES AND
PERSONAL RELATIONSHIPS*

THE EFFECT OF ANXIETY ON SCORING AND OBSERVER
EFFECTS IN A BLIND-MATCHING TEST WITH TARGETS OF
SPECIFIC AND EMOTIONAL IMPLICATIONS TO THE SUBJECTS

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In a study carried out by Johnson and Nordbeck (JP, 1972, 122-132) based on psychodynamic ideas of "defense mechanisms" and "censorship," a selected subject manifested a striking differential scoring. First, during preliminary test sessions she switched scoring direction with the turn of the psychological atmosphere, together with a change of experimental technique, from psi-hitting (p < .05) to psi-missing (p < .01). This was followed by a formal Blind-Matching Test (BMT) employing two types of targets. The result was psi-hitting on the targets having a strong, positive appeal to the subject, whereas there was strong psi-missing on the "negative," traumatic targets. The differential scoring between the two types of targets amounted to a CR_d of 4.58 (p < .00001, two-tailed). The selection of the two types of targets was based on anamnestic information gathered by personality diagnostic methods and a depth interview. During the course of the successful experiments the subject was unaware of the nature of the targets used in the study. The BMT was administered via closed-circuit TV, a design that totally eliminated the possibility that olfactory cues could play a role in the outcome of the experiment.

From the viewpoint of observational theory the BMT is very well suited for detecting observational effects, as the subjects do not obtain feedback about their performance, nor on the individual cards, nor on their overall score. The persons checking the correspondence between key cards and matched cards are therefore the first observers of the outcome and thus can be considered to produce the paranormal effect.

*Chaired by Adrian Parker.

Could a similar effect as in the Johnson and Nordbeck study, albeit perhaps a more modest one, be obtained for a group of unselected ESP subjects? The object of this study is to try to answer that question and in addition to use a design by which observer effects can be studied.

One hundred twenty nonpsychology students were given a questionnaire involving questions on traumatic experiences (accidents, death, illness, etc.) plus items related to very strong positive experiences. In addition, a Dutch short form of the Taylor Manifest Anxiety Scale (TMAS) was used. Subjects were also asked to indicate whether they were willing to take part on a voluntary basis in some experiments later on, in which case they were asked to come to the Parapsychology Laboratory for a follow-up interview and for some experiments.

Three experimenter-assistants carried out an interview focused on traumatic experiences as well as on strongly pleasant or positive experiences. (We wish to convey our great appreciation to Selma Ligthart, Fred Woudenberg, and Emile van der Zee, for the help they rendered us by taking part as experimenter-assistants.) They rated the judged severity of the traumatic episodes by the use of a semantic differential. Furthermore, the strengths of the three negative and the three positive episodes were also rated.

A word-recognition task was planned to validate the rated emotional strength of the selected target words, but because of a number of technical adversities associated with that part of the experiment, the obtained data are not considered worthwhile to be dealt with in this paper.

The Defense Mechanism Test (DMT) has in a number of studies manifested some predictive power as regards the scoring behavior in so-called ESP tests (see Johnson and Haraldsson, JP, 1984, 185-200). That alone made it worthwhile to use in our study, in spite of the fact of the complication that here an attempt is made to influence the scoring direction by means of selection of targets. That makes it more questionable what kind of correlation one can expect. Because the DMT is considered to measure submanifest anxiety it may be of interest to see if the DMT and the TMAS are intercorrelated.

Seventy-four subjects were asked to come for a second session. The BMT consisted of matching 24 envelopes containing target cards against six key envelopes containing the corresponding targets. There were four matching envelopes for each of the target categories. In each of the identically looking envelopes there was a card with the target word printed on it. All cards were wrapped in aluminum foil in a standardized way. For each subject the order of the envelopes within the batch had been strictly randomized. The subject's task was to perform a forced-choice balanced matching of the 24 envelopes against the 6 key-target

envelopes that appeared on the screen of a closed circuit TV. During the matching procedure, the envelopes were put into six different boxes corresponding to the positions of key envelopes appearing on the TV screen, resulting in four envelopes in each of the boxes.

In order to study observer effects, we decided that the data from the BMT should be split into two categories, Pool A (48 subjects, to be observed by the first author and the three experimenter-assistants) and Pool B (26 subjects, to be observed by two categories of external observers, "sheep" and "goats"). A strict random procedure was followed for the designation of data into the two pools and the subcategories within each pool.

To prepare for the evaluation of the data, the 74 batches of matching units (key envelopes and matched envelopes) were photographed by a photographer who was naive to the purpose and rationale of the experiment. Slides, framed and marked, were presented to the designated observers, who had to make notations of the number of hits per slide.

The primary hypotheses in the present study concern the replication of the differential effect for targets with different emotional loadings and the possible relationship between this differential scoring and anxiety in the subject.

H1: The differential effect between the numbers of hits in the emotionally positive target set versus the emotionally negative target set. H2: Scoring on the strongest negative target. H3: The relationship between anxiety and the differential scoring between positive and negative target sets. As measures of anxiety we have the scoring on the TMAS and on the short-form DMT. Therefore, we have two hypotheses: H3a: The correlation between TMAS and differential scoring on the BM task. H3b: The correlation between DMT and differential scoring on the BM task.

The observational hypotheses are HO1: The differential effect as in H1 differs between the two halves of the A pool that have been observed by the first author and the three experimenter-assistants, respectively. HO2: The overall effect in the B pool differs between sheep observers and goat observers.

The results of the experiment are nonsignificant for each of the hypotheses: H1: The one-sample t-test applied to the differential scoring between the emotionally positive and negative target sets per subject results in: $t = .82$, 47 df, $p = .4$ (two-tailed). H2: On the strongest negative target, the average number of hits per subject is .6875, whereas mean chance expectation (MCE) is .6667 (two-thirds). The one-sample t-test results in: $t = .22$, 47 df, $p = .8$ (two-tailed). H3a: The correlation between differential score and the score on the TMAS results in Spearman's rho = .117, $N = 48$, $p = .4$ (two-tailed). H3b: The correlation

between differential score and the score on the DMT results in Spearman's rho = .074, $N = 44$, $p = .6$ (two-tailed). In 5 out of 74 cases (4 out of the 48 of Pool A) the subjects did not produce usable DMT protocols.

Hypothesis HO1: The difference in scoring between the two observer categories, namely the first author versus the three experimenter-assistants, is tested by a two-sample t-test: $t = .27$, 46 df, $p = .8$ (two-tailed). Hypothesis HO2: The difference in overall scoring between "sheep" observers and "goat" observers of the data, when tested by a two-sample t-test, results in: $t = 1.00$, 24 df, $p = .3$ (two-tailed).

In an exploratory analysis, we employed the degree of traumatization involved in the experiences the subjects described during the interview procedure. We calculated Spearman's rank correlation coefficients between:

- TMAS and number of hits on the negative target set: $r_s = -.33$, $N = 48$, $p = .023$.

- DMT and number of binary hits: $r_s = -.45$, $N = 44$, $p = .002$.

- Trauma classification and number of hits on the negative target set: $r_s = -.43$, $N = 48$, $p = .002$.

Intercorrelations between the psychological variables are for the 74 subjects: Between TMAS and DMT: $r_s = -.11$; between TMAS and trauma classification: $r_s = .06$; between DMT and trauma: $r_s = .07$; none of these approaches significance.

We evaluated the overall scoring in the experiment. We find a mean of 3.581 hits per subject, with a standard deviation of 1.767 (MCE is 4). For the 74 subjects, a one-sample t-test would give a t of -2.04, with 73 degrees of freedom ($p = .04$, two-tailed).

The main conclusion is that the results of the study by Johnson and Nordbeck cannot be generalized to a population of unselected subjects. In the exploratory analysis we find some strong associations between psychological variables and aspects of ESP scoring. Trauma classification and manifest anxiety both correlate with ESP scoring on the emotionally negative target set in the direction of lower scoring (more psi-missing) being associated with higher trauma and anxiety. The DMT correlation is in the direction of a greater number of binary hits being associated with a higher level of submanifest anxiety (lower DMT score). This is in contrast with the correlation of DMT scoring with total number of hits, where the correlation amounts to an r_s of +.16 (with $N = 44$, $p = .29$, two-tailed). This indicates a scoring pattern in the highly anxious, low DMT scorers, where matchings tend to avoid

the target itself but are shifted preferentially within the same emotional set.

According to observational theory, paranormal effects are produced through the observation of an essentially random outcome by a motivated human observer. This viewpoint of observational theory is sharply distinct from the traditional viewpoint, as the effects are assumed to be produced by the checkers instead of the subjects. The interpretation of a correlation between a trait of the subject, say, anxiety, and his or her scoring on the ESP task is traditionally a genuine relationship between anxiety and ESP scoring. Observationally, such a correlation has to be regarded as being produced by the observer of the correlation. As no feedback is given to the subject, it means that the checker produces the correlation. This calls for better experimental control of the observation procedure. The present study, entertaining both the traditional paradigm and the observational paradigm in distinct hypotheses, however, offers no result favoring either one of them.

A TEST OF HEYMANS' THEORY ON PARANORMAL PHENOMENA

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Professor G. Heymans (1857-1930) can be considered the founder of the scientific and experimental approach in parapsychology in the Netherlands. Internationally he is best known for the telepathy experiment with the subject van Dam, carried out in his Psychological Laboratory at the University of Gröningen together with his assistants Brugmans and Weinberg. Less well known are his theoretical views on paranormal phenomena and the rather unique way by which he became involved in parapsychology.

Heymans was a philosopher and based his philosophical position on the work of Fechner. In Fechner's ideas, which were further developed by Heymans, the hypothesis of psychic monism or "pan-psychism" takes a central position. Psychic monism is an offspring of an idealistic world view that supposes that there is only one fundamental reality and that all physical phenomena are reducible to the mental or psychic. According to the psychic monistic theory, paranormal phenomena such as telepathy are to be expected. In addition, the theory provides a number of predictions about various properties of paranormal phenomena. Therefore, Heymans became interested in the work of the British SPR and turned to the parapsychological literature of his day to study whether the properties of paranormal phenomena were in agreement with the theoretical predictions he had arrived at beforehand.

Psychic monism assumes that all phenomena are basically mental and consequently assumes a "world-mind" (Welbewusstsein), that which contains all the mental. It can be considered the equivalent of what space is for physical matter. The world-mind is internally perceived through awareness. The consciousness of an individual is part of this world-mind. Consciousness can be thought of as consisting of the individual's consciousness, which is what the individual is aware of at a given moment, and the peripheral consciousness, which contains all our memories and knowledge.

Elements of the peripheral consciousness are not isolated but part of mental structures, complexes of related images. When human beings grow up, their consciousness develops into more strongly organized mental structures of images. Because these mental structures are based on experiences they mainly involve memories. The peripheral consciousness consists of many of such mental structures which are in different degrees related to other structures by associations.

The content of the individual consciousness changes regularly. Which images enter the individual consciousness is governed by the laws of association and depends on the nature and intensity of an image, its emotional character, and its association with other images. Especially strong are the perceptions, and accordingly they have a high probability of becoming the object of awareness. Perceptions evoke the mental structures of which they are part. Also likely to reach consciousness are recent events, images strongly associated with the present content of the consciousness, and strong emotions. On the other hand, weak images of the peripheral consciousness will only become conscious to the individual under favorable conditions; for instance, in the absence of sensory stimulation. There is constant competition among perceptions and mental structures of the peripheral consciousness to occupy awareness.

Because nature is considered as basically mental it can be assumed that the processes involved in the individual's consciousness also apply to the world-mind. There is no fundamental difference between the two. An individual is made up of various mental structures which become more and more a structural unit when the individual develops. Such structural units, the individuals, are in themselves again elements of a larger whole, the world-mind. That individuals are not aware of their association with other elements of the world-mind is because in general only perceptions with its associated mental structures and elements of one's own peripheral consciousness will reach the individual consciousness. Since these mental structures are familiar, because they are based on the individual's experiences of the past, a sensation of individualism is created. But individuals share experiences and therefore associative connections are formed in the world-mind between mental structures of different individuals. Hence, a mental image in one individual might give rise to an associated mental structure of another