

ESP CONTRIBUTES TO THE UNCONSCIOUS FORMATION OF A PREFERENCE

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Abstract

This study is carried out as a test of some basic ideas drawn from first sight theory (FST). Some of the main ideas being tested include the assumption that extrasensory information has a part to play in the formation of all experience in a continuous, implicit, unconscious way. First sight theory also proposes that experience is created by unconsciously sampling all sources of potential information holistically, including psi information, and that all of these sources of information are treated in similar ways. And it also proposes that valuing the extrasensory domain of information, openness toward and interest in inward experience of the inadvertent sort that most implies unconscious processing (called liminal experience), being relatively free of fear, and being open to intimate communication with other people, also predispose one to make positive access to psi information.

The esthetic experience of preference is chosen as an everyday form of experience for study in terms of these propositions. Considerable research has demonstrated a tendency for persons to experience greater liking or attraction for things as a function of having been exposed to them previously. This is called the Mere Exposure Effect (MEE). This is often demonstrated especially strongly if the exposures are implicit, subliminally presented, and never available to awareness. The assumption is made here that an extrasensory MEE should obtain as readily as a subliminal one, and this study attempted to induce both in its participants.

Participants also responded to a number of psychological tests used here to assess aspects of unconscious motivation or intention. We measured whether or not one thinks ESP is possible in such situations, different aspects of openness to inner experience, tolerance of ambiguity, tolerance for interpersonal intimacy, creativity and fearfulness because FST predicts that each of these should relate to the utilization of extrasensory information. We also assessed the Need for Cognition, the Need for Structure, and Boredom-Proneness because these have been found to moderate the subliminal MEE.

Finally, we used a subliminal, implicit means to induce two different moods in our participants. Half were exposed to a stimulus aimed at enhancing a mood of

symbiotic security and well-being, and consequent openness toward the situation, while the other half were exposed to a stimulus intended to evoke a mood of relative isolation, constriction and vigilance.

Participants were subliminally exposed to a series of pictures, the mood manipulations, and a series of ESP targets (different pictures that were totally covered by an opaque block, such that they would convey no information even if seen supraliminally), in order to effect mood and induce the MEEs.

We expected to find an overall subliminal MEE but did not, and expected that participants would show similar directions of functioning in their subliminal and extrasensory MEEs, but they did not. We did find a number of predicted relationships with the motivational, attitudinal variables, particularly in the case of the extrasensory MEE, and particularly in the context of the induction of the open, positive mood. Discussion focuses on the development of a greater understanding of unconscious thought and how extrasensory information contributes to it.

Introduction

This study was carried out in order to test some hypotheses generated by the first sight theory of psi functioning (FST). The theory proposes that psi information contributes unconsciously in a persistent and primary way to the formation of all experience and all unconscious goal-oriented behavior. It also postulates that unconscious thinking treats all of its sources of potential information in the same ways to reach summative constructions to present to consciousness. For example, subliminal perception and extrasensory perception are presumed to contribute in similar ways and following similar principles. This study attempts to test this idea. Two forms of subliminal influence as well as extrasensory targets are presented to participants in this study, who are then asked to make a series of choices of esthetic preference between pictures presented in pairs. One subliminal influence is expected to effect the general mood of the participant, and the other is expected to arouse a feeling of liking for some pictures relative to others. The extrasensory material is also expected to arouse liking for some stimuli, in the manner of the second subliminal influence. How might all of these things work together? The study is an exploration of the way in which unconscious thought combines these sources in the form of an ultimate experience of liking. FST asserts that the unconscious mind combines multitudinous such sources of potential information constantly as it constructs the contents of consciousness. In this study we attempt to control three of them to see what might be learned about the unconscious processing of psi and other information. We are guided by specific hypotheses drawn from FST, that are also consistent with the published literatures on subliminal perception and extrasensory perception.

Expectations of theory.

Several expectations are drawn from FST. First, it is assumed that, processing of extrasensory information will be carried out unconsciously and holistically in concert with other sources of unconscious information, such as subliminal perception. Other things being equal, their patterns of processing are expected to be similar. One

implication of this is that when persons are tested in both subliminal and extrasensory responsiveness in the same situation, their performance in the two tasks should tend to correlate positively. This has received some empirical support already. Schmeidler (1986) surveyed 17 reports in which participants were tested for both extrasensory and subliminal response. She found that discrepant results became sensible if she distinguished between subliminal procedures that were rapid enough to permit no awareness of the stimulus, and a few others in which visual presentations were much longer and probably permitted some degree of awareness. The ones that were “deeply subliminal” showed a clear trend toward a positive relationship between the two, with 17 of 22 yielding positive correlations (five independently significant), while none of the five reversals were statistically significant. While she did no meta-analysis, the trend appears clear. In the two series in which the procedures permitted some awareness of the stimulus, the relationship between the subliminal and extrasensory performance was significantly negative, suggesting that contrast rather than assimilation occurred with the quasi-subliminal stimuli, as has frequently been reported with marginal exposure times {Klein Villa, et al, 2004; Snodgrass, 2004; Snodgrass, 2006}. Another way of thinking of this, in terms of parapsychological constructs, is that the juxtaposition of somewhat conscious stimuli with completely unconscious ones (ESP) evoked a bidirectional effect (Rao, 1965; Rao & Sukhakar, 1987). In any case, it is in regard to truly subliminal processing and ESP that a positive relationship is expected, and this is the expectation tested in this study.

Another implication of the prediction of similar processing is that, generally speaking, conditions that moderate one of the two processes will tend to moderate the other as well in the same way. For example, if the issue of the credibility of the experiment as testing something real or not moderates the effect of subliminal influence it will tend to do the same for extrasensory influence. In fact, this has been found in both domains (Burgess & Sales, 1977; Palmer, 1978; Schmeidler & McConnell, 1958). In parapsychology it is referred to as the sheep-goat effect

While similar patterns of moderation may be generally expected, theory leads to the assumption that they will sometimes be different as well. FST proposes that extrasensory apprehensions represent the initial consideration for the unconscious

processes that construct experience and choices. Sensory information serves as an immediate input for consciousness and is expected to be more highly determinative of those products. Subliminal sensory information is intermediate between those two sources and may often be weighted more heavily than extrasensory information in the holistic processing of unconscious thought. And certain contextual factors may make one more salient than the other. While theory is some guide here, perhaps these are best considered empirical, exploratory questions for now. Empirical results will help guide more precise theory.

This study measures an array of easily-assessed variables that have been found to be moderators in terms of MEE and ESP in order to test this assumption of generally parallel functioning. In some cases, the expectation of similar moderation is stronger than in others. In the case of one variable (the Need for Structure), theory predicts a contrary direction of moderation.

FST predicts that extrasensory response (and probably subliminal response as well) should be a function of unconscious intention in regard to the extrasensory information in question, and this intention can be effected by various things, including the nature of the current task, the individual's mood or emotional state, the perceived credibility of the source of information, and the dispositional tendency to value and make reference to experiences that are liminal – that is, that are consciously inadvertent and that imply the action of unconscious thought. The variables examined here are spelled out in more detail in a later section.

The Mere Exposure Effect: Subliminal and Extrasensory

The mere exposure effect. The Mere Exposure Effect (MEE) (Zajonc, 1968) has been widely studied. In general terms, it means that exposure to something tends to increase a person's liking for it. Perhaps counter-intuitively, this effect has been found across many studies to be most reliable when the exposure is suboptimal or subliminal, too quick or too faint to be consciously perceived (Bornstein, 1989). This robust subliminal effect was chosen for comparison here to ESP. While MEE generally has been studied as a positive effect (increase of liking) it has also been found to reverse under certain conditions and then exposure produces *less* liking, in a manner similar to

ESP scores that will sometimes be above chance and sometimes below as a function of different things.¹ Some personality variables that have been found to predict the MEE are also examined here. These are the Need for Structure (Hansen & Bartsch, 2001), Boredom Proneness (Bornstein, Kale & Cornell, 1990), and the Need for Cognition (Petty, et al, 2008). Of these, it should be noted that only the Need for Cognition has been found to affect subliminal MEE. Boredom Proneness and the Need for Structure were tested with fully conscious exposures of material. It is known that conscious exposure effects are much more subject to conscious contrast effects (that is, when participants know that they have been exposed to something they can “correct” for this influence and frequently show reversals of preference – e.g. Bornstein & D’Agostino, 1992). These two variables are included here in an exploratory way to see if they affect the experience of preference when presentations are subliminal.

First Sight theory, combined with research on other domains of subliminal response, also predicts that an individual’s interest in and openness toward liminal experience should moderate the MEE. Different facets of this general domain are assessed here in different ways.

Since it is a basic premise of FST that extrasensory information is used unconsciously in the same ways that subliminal information is, we assume that an MEE can be aroused by extrasensory targets as well as it is by subliminal stimulations.² FST also holds that liminal experiences that are inadvertently related to extrasensory meanings are the ways in which those meanings can be seen to be at work, and the experience of preference for a picture stands as well suited as any other everyday experience to carry such a liminal dimension. Preference is an intuitive choice, based on a feeling or “sense” of liking, and should be as subject to the inadvertent influence of extrasensory

¹ It may be satisfying to parapsychologists to note that cognitive psychologists working on unconscious cognition have only recently come to appreciate the meaningfulness of below-chance scores and bidirectional response patterns (e.g. Erdelyi, 2004; Katz, 2001; Klein Villa, et al 2006).

² Since extrasensory effects in any well-designed study are never exposed to participants at all, it is in some sense inappropriate to speak of an “extrasensory MEE” except in an analogous way. However extrasensory information is accessed, there may be no conceivable condition in which it is not available. However, if extrasensory information is to be used meaningfully by anyone, it must be because some bit of it is somehow being noted as especially pertinent in a given situation. In that sense, we present extrasensory “exposures” of the target material. We trust that our intention that the material is a target, plus the symbolic “presentation” of it in a completely covered form, in the context of an experiment understood to be about ESP, are all enough to nominate the material to the concerns of the participant.

apprehensions as it is of subliminal apprehensions. The idea has already received some support in the work of Bem (2003, 2005), Savva and colleagues (2004, 2005) and Holt (2006) who have reported extrasensory effects of precognitive targets on preference ratings of pictures in a paradigm similar to the one employed here. This idea of an extrasensory MEE is tested here using clairvoyant instead of precognitive targets.

Also according to FST, there are a number of considerations that are expected to influence the direction of intention in regard to an extrasensory response, and hence to the direction of deviation expected to be expressed in a response such as an extrasensory MEE. As stated above, one such determinant of unconscious intention is the individual's understanding of the extrasensory source as legitimate or not. This has been assessed in the past by asking participants if they believe that extrasensory perception is possible or not in the conditions of the experiment (Schmeidler's "sheep-goat" question). This general assessment of legitimacy is assumed to be relevant here as well. Another important consideration is whether or not the meanings apprehended via psi arouse fear and aversion or positive interest. We were careful to use testing materials that would not be expected to arouse fear or aversion, but there is still the matter of an individual's dispositional level of fearfulness. A relatively fearful person would be expected to experience aversion to more potential meanings, and hence be more likely to show negative extrasensory effects. There is considerable evidence that this is true in the parapsychological literature on anxiety or neuroticism. It is a relatively robust finding that more anxious people are more likely to express psi negatively (Palmer, 1978, 1982). Another consideration expected to be important is the degree to which one is open to liminal experience, values it, and is accustomed to utilizing it to enrich decisions. There are various ways that have been employed to assess such tendencies, including measures of a posture of openness to one's own inner life, an ability to use such inner openness creatively as shown by success in actual creative work, a tolerance for uncertainty and ambiguity, and a tolerance for the kind of profound inner openness to other people that is implied by extrasensory perception. Evidence for all of these things has been reported before in the literature (e.g. Carpenter, 1971; Dalton, 1997; Palmer, 1997; Schmeidler, 1988). Several different measures reflecting different aspects of such inner openness and creativity are employed in this study, and are expected to bear a positive relationship with

an extrasensory MEE. Because of the assumption of generally similar processing across unconscious sources of potential meaning, it was of interest to see if they might effect a subliminal MEE as well.

The Manipulation of Mood.

We used a subliminal manipulation to attempt to evoke in half of our participants a mood of greater openness and emotional security, and in the other half a mood of relative emotional constriction. To evoke the more open mood we subliminally flashed the words MOMMY AND I ARE ONE, and to the other half, for the contrasting mood, we exposed MOMMY IS LEAVING. The mood-enhancing (and performance enhancing) effects of the “mommy and I are one” (MIO) subliminal stimulus has been fairly widely studied, with much of the research summarized by Silverman (Silverman, Lachman & Millich, 1982) and Bornstein (1990). Based upon psychoanalytic theory, Silverman believed that this stimulus is uniquely empowered to arouse a mood of calm and well-being. Like any good thing, it has sometimes been found to have the opposite effect (e.g. Sohlberg Billinghamurst, & Nysten, 1998). Here though, we are expecting it to have the normative positive effect; while the contrasting message is intended to evoke a less open and comfortable state.

In addition to its power to effect mood, we were also interested in the affect of this variable as it might function contextually for the expression of subliminal and extrasensory information in esthetic choices. We anticipated that the condition of relative security and well-being evoked by MIO might permit those influences to be expressed more strongly, in the way that more positive, open states of mind have been found to influence other subliminal effects (Avramova & Stapel, 2008). In this case, the two MEEs will be stronger in the MIO condition than in the MIL condition. We also anticipated that the MIO-induced mood might make the subliminal and extrasensory domains more salient or accessible, and hence more responsive to the various predictor variables being measured, in the way that a conflict-reducing subliminal stimulus has been found to enhance the importance of developmental variables in the ability to remember emotionally conflictful material (Geisler, 1986), or as the MIO subliminal stimulus itself was found to enhance the effectiveness of psychotherapeutic

anxiety-reduction procedures (Silverman, Frank & Dachinger, 1974) or adaptation-enhancing techniques (Silverman & Weinberger, 1985). In these studies, the MIO stimulus did not improve functioning as such, but it facilitated the effectiveness of the other interventions. If the mood-enhancing stimulus does have this contextual importance in this study, then the responsiveness of the two MEEs to the other variables intended to predict them should be greater in the MIO condition than in the MIL condition.

The Present Study

In this study we intended to influence the moods of our participants by a subliminal manipulation (MIO or MIL) and then induce enhanced liking for certain pictures by subliminally exposing some of them and using others as extrasensory targets. We also aimed to predict the direction of the two MEEs using various measures that were predicted by first sight theory to be important in this regard and that have also been found to be related to other expressions of subliminal and extrasensory information in previous research. We also intended to examine the effect of the mood manipulation upon both the directions of the MEEs, and upon the predictability of the MEEs by the various predictor variables. We also included one other instrument because it appeared to assess dimensions that should be relevant to unconscious processing according to FST. This is the short form of Hartmann's Boundary Questionnaire, intended to assess "boundary thinness" (Harrison, 2005; Hartmann, 1989; Rawling, 2001). Since this scale has several different factors, some of which are clearly psychopathological (the scale was originally intended to aid in the understanding of a psychiatric population of extreme sufferers from nightmares), and these factors have different relationships with various aspects of personality functioning, we planned to factor-analyze the responses and determine hypotheses based upon obtained factors.

Finally, we planned to construct some empirically-derived predictors of extrasensory and subliminal responsiveness at the item level using all the non-proprietary instruments employed. To the extent that these post-dictive clusters cross-validate against each the other criterion (the subliminal predictor predicts ESP and vice versa) additional evidence will be obtained for the proposition that extrasensory and subliminal processing are similar.

Method

Design

Individual testing was conducted by a single experimenter, and was primarily administered by a PC computer using E-Prime 1.1 test administration software, and a CRT monitor with a relatively rapid refresh rate, such that brief exposures of stimuli would be possible. A masking stimulus was used immediately after each subliminal exposure. Pictures that were used as subliminal and extrasensory stimuli were taken from the International Affective Picture Series, and were assembled into 50 pairs of pictures closely matched for valence and intensity. All were relatively pleasant pictures, drawn from the top 35% of the population in terms of valence. The 50 pairs were divided into two sets of 25 pairs to be used as subliminal and extrasensory targets and paired controls. Random assignment of different target presentations was determined for each session using the E-Prime random function which samples the computers internal clock.

Participants were tested individually. After securing informed consent, each person filled out a personality questionnaire and responded to a packet of further questions (described further below). Participants viewed a five-minute video of pictures of galactic structures taken from the Hubble telescope, accompanied by gentle music, in a prelude to the experiment that was intended to be pleasant and relaxing. Then the participant was told that the test to follow would first present them with a series of exposures of the same complex pattern, during which time they would also be flashed other information too briefly for it to be perceived. Then they would be asked for their judgments about a series of photographs. They were informed that we expected that both extrasensory and subliminal information might exert a subtle effect upon their experience in a way that would be explained after the experiment was finished. Then he or she was asked to fixate on the center of the screen at a large **X** while the colored pattern would be repeatedly exposed. Following a white screen with a centered **X** one of 3 kinds of information was flashed for 10 ms., immediately followed by a 2 second exposure of the fractal design, after which the blank screen with fixation point reappeared for one second. This sequence was repeated 155 times. The briefly presented information was either one of the two mommy messages (MIO or MIL – exposed on 5 occasions), or one of 20

randomly selected subliminal targets exposed on 5 occasions each, or one of 20 ESP targets exposed once each. The ESP targets were exactly like the subliminal targets except that the pictures were completely covered by an opaque black rectangle so that absolutely no information is available if they are viewed supraliminally (this is analogous to the card-guessing technique of hiding a card away from the participant inside a sealed, opaque envelope). Each of these exposures, subliminal-pictorial, “mommy” and extrasensory, was presented for 10 ms and was placed within one of the 4 quadrants of the screen rather than centrally presented to further mask the content of the subliminal material, and then immediately followed by the backward-mask.

Following this, P was asked to indicate his or her current mood by responding to 3 adjective pairs: sad-happy, downhearted-upbeat and lethargic-peppy, using a 6-point scale (lethargic-peppy responses were not correlated with the other two, which were clearer expressions of the mood dimension that we were interested in measuring, so that pair was not used subsequently in any analyses). Then the participant was told that the experimenters were interested in early memory, and P was asked to call in the experimenter who would explain further what was being asked. When the experimenter returned, he or she said to P: “I want to ask you to tell me the earliest memory that comes to mind right now. We are interested in how far back memory can reach. Please take a moment to think of some very early memory and tell it like a little story. Give me all the details you can remember.” After P recounted an early memory, the experimenter asked for further details if few had been given, such as who was involved in the memory, what were the details of the situation, what feelings were involved, and how the memory ended. The memory was digitally recorded to permit scoring later as an implicit measure of mood. This memory task also served as a distraction and delay, in order to permit a stronger expression of the subliminal exposures, which have been found to be most effective when not tested immediately after exposure (Bornstein, et al, 1990). P was then presented with 50 pairs of pictures and asked to select the one he or she preferred in each pair.

Ps were then shown, for their interest, the 25 pictures that had just been used for them as extrasensory targets. Then they were given feedback as to their results – whether their responses to the extrasensory and the subliminal pictures were above chance or not;

and in either case they were told to draw no definite conclusions about themselves from a small, exploratory test, about things which science still rather poorly understands. After answering any questions, and thanking P for helping, the experimenter ended the session.

Participants

Ninety-five participants took part in the study, but computer malfunctions caused slower refresh rates than 100 HZ in 17 cases, so the required 10 ms exposure times were compromised. This left 78 cases in which the procedure was valid. Of those 78, 59 were female, and 75 were psychology students at Liverpool-Hope University who received course credit for their participation. The other three were volunteers at the Rhine Research Center. Ages ranged from 18 to 78, with a mode of 18 and a median of 25.5. Data collection ended by pre-agreement when a given semester ended at Liverpool-Hope.

Measures

Dependent variables

Mere exposure effects.

- A Ps subliminal MEE score (SMEE) was equal to the number of times that P preferred the picture to which they had been exposed. MCE was 12.5.
- The extrasensory MEE (EMEE) was the number of times that the picture picked was the one that had been randomly picked to be an ESP target. MCE was 12.5.

Mood

- A direct measure of mood was obtained by summing the responses to the two items: sad-happy and downhearted- upbeat.
- An indirect measure of mood was taken from an independent judge's ratings of the early memories. Ratings ranged from -3 (very sad) to +3 (very happy), and demonstrated satisfactory test-retest reliability on a subsample of 20 cases³.

³ Since implicit measures of unconscious motives have been found to be much more predictive of actual behavior in most non-self-conscious situations, and much more validly responsive to non-conscious manipulations (Woike, 2008), we expected that the implicit, indirect measure of mood would be more strongly effected by the MIO-MIL manipulation.

Independent variables

- Attitude about the legitimacy of an extrasensory source of information in this context was assessed from a response to the question: “Do you believe that ESP is possible under the conditions of this experiment?” Responses were either “yes,” “unsure,” or “no.”
- Fearfulness was assessed by the Anxiety and Vulnerability subscales of the NEO-PI personality inventory (Costa & McCrae, 1992).
- Openness to ones inner life was assessed by the Openness to Fantasy, Openness to Esthetics, and Openness to Feelings subscales of the NEO-PI.
- Need for Structure was assessed by the 11-item Personal Need for Structure Scale (Neuberg & Newsom, 1993).
- Need for Cognition was measured by the 18-item Short Need for Cognition Scale (Caccioppo, Petty & Kao, 1984).
- Boredom Proneness was assessed by summing responses on a 6- point scale to the items: I am easily bored, I enjoy working at the same task for long periods of time (reverse scored), Routines that last too long make me very restless, Unless I am doing something exciting I feel very dull, I rarely feel excited about my work.
- Factors of Boundary Thinness were drawn from our own Factor analysis of responses to the Short Boundary Questionnaire. This yielded 5 factors which we called: BQ-Regression, BQ-Need for Order, BQ-Confusion, BQ-Orientation to Unconscious Process and BQ-Tolerance for Merger. The latter two appeared to be pertinent to utilizing psi information and other unconscious information according to FST.
- Creativity was assessed by the yes-or-no response to the following question: Are you currently engaged in some creative/artistic work?
- Empirically-derived predictors of extrasensory and subliminal response were created by stepwise regression analysis upon all the individual items of the Boundary Questionnaire, the Need for Cognition Scale, the Need for Structure Scale, and the measure of Boredom Proneness (these scales are non-proprietary, so are available for such use). Scales of this sort are expected to have no factorial unity, so they cannot be said to measure any

psychological construct – except for the criterion they are designed to predict. Thus we generated scales for Extrasensory Responsiveness and Subliminal Responsiveness.

Hypotheses

1. We will obtain evidence of a subliminal Mere Exposure Effect
2. Subliminal MEE scores and extrasensory MEE scores will be positively correlated.
3. Both self-report and implicit measures of mood will be more positive in the MIO condition than in the MIL condition. Since we expected that indirect mood measurement to be a more valid indication of actual emotional state, we expected that the effect on the indirect (memory score) measure would be stronger.
4. Subliminal MEE scores will vary as a function of:
 - a. Need for Cognition
 - b. BQ-Orientation to Unconscious Process
 - c. Creativity
 - d. Need for Structure
 - e. Boredom Proneness (negatively)
5. Extrasensory MEE scores will vary as a function of:
 - a. Belief ESP Possible (theory and extrapolation from empirical)
 - b. Anxiety (negatively)
 - c. Vulnerability (negatively)
 - d. Openness to Feelings
 - e. Openness to Esthetics
 - f. Openness to Fantasy
 - g. Need for Structure (negatively)
 - h. BQ-Orientation to Unconscious Process
 - i. BQ-Tolerance for Merger
 - j. Creativity
6. The salience of attitude/motivation predictors on the two MEEs will be enhanced in the MIO condition relative to the MIL condition.

7. The nominated empirical predictor for Extrasensory Responsiveness will cross-validate upon subliminal MEE scores, and the nominated predictor for Subliminal Responsiveness will cross-validate upon extrasensory MEE scores.

Results

Mere Exposure Effects. We predicted a subliminal MEE but found none. With MCE = 12.5, the average score was slightly in the wrong direction, 12.10. In terms of individual preferences, 44% (34) of the Ps expressed an overall preference for the subliminally-exposed pictures. Similarly, there was no evidence for an overall extrasensory MEE (none had been predicted). The average score was slightly in the ESP direction at 12.58, but hardly significant. A majority of Ps actually showed an average preference for the non-target control pictures (41, or 53%).

Relation between subliminal and extrasensory MEEs. No relationship was found. The correlation was virtually nil: $r = -.004$.

Effect of mood manipulation. Mood scores were more positive in the MIO condition than in the MIL condition. As predicted, the relationship was stronger for the implicit memory measure ($t = 2.29$, $p(1\text{-tail}) = .012$) than for the self-report measure ($t = 1.84$, $p(1\text{-tail}) = .035$). *Prediction of subliminal MEE.* See Table 1.

Table 1. Relations of Predictors to MEE scores

Predictor	Subliminal MEE	Extrasensory MEE
Need for Cognition	.21**a	.12
Need for Structure	-.02a	-.22**a
Boredom-Proneness	-.20**a	.05
Openness to Fantasy	.06	.33***a

Openness to Esthetics	.10	.20**a
Openness to Feelings	.04	.30***a
Anxiety	-.01	-.16*a
Vulnerability	-.09	-.23**a
Belief ESP Possible	-.01	.19**a
BQ-Unconscious Orientation	-.31***a	.24**a
BQ-Tolerance for Merger	.17a	.26**a
Creative Occupation	.11a	.11a

a: predicted relationship *p<.10, 1-tail **p<.05, 1-tail ***p<.01, 1-tail

Of the six variables predicted to effect the subliminal Mere Exposure Effect, Need for Cognition, Boredom-Proneness and BQ-Unconscious Orientation are all significant in the predicted directions. The relationships with BQ-Tolerance for Merger and Creativity are in the right direction but not significant. The relationship with Need for Structure is very slightly in the unpredicted direction.

In order to determine which among this array of variables independently contribute significantly to the prediction, the three variables that yielded significant univariate tests were subjected to a multiple regression analysis against the criterion of subliminal MEE. This resulted in a multiple R of .341 ($p = .028$) with only BQ-Unconscious Orientation being independently significant..

Prediction of Extrasensory MEE. See Table 1.

Of the 10 variables expected to predict an extrasensory Mere Exposure Effect, 8 are significant at the level of .05 or lower, one is suggestively significant, and one (creative occupation) is not significant. Positive relationships are found, as predicted, with Openness to Fantasy, Openness to Esthetics, Openness to Feelings, Belief that ESP is possible, BQ-Unconscious Orientation, and BQ-Tolerance for Merger. Negative relationships are found as predicted with Need for Structure, Anxiety (suggestive) and Vulnerability.

The variables making independent predictions by multiple regression ($R = .507$, $p = .004$) are Openness to Fantasy ($p = .002$), BQ-Tolerance for Merger ($p = .02$), and Vulnerability (negatively: $p = .02$).

Enhancement of Relationships with Subliminal MEE by Mood Manipulation. See Table 2.

Table 2. Relationships of Predictors with Subliminal MEE as a function of Mood Conditions
(Predicted relationships only)

Predictor	MIO	MIL
Need for Cognition	.23*	.19
Need for Structure	-.24 (reversed)	.22*
Boredom-Proneness	-.15	-.29**
BQ-Unconscious Orientation	.27*	.40**
BQ-Tolerance for Merger	.28**	.03
Creative Occupation	.14	.06

A mixed picture emerges in that different relationships are stronger in the two conditions. The pattern of relationships that was predicted was found in some cases, but there were also some interesting reversals. In the MIO condition, when a positive mood was enhanced, there is a stronger and significant relationship with BQ-Tolerance for Merger and a suggestively significant relationship with Need for Cognition. There is also a suggestively significant relationship with BQ-Unconscious Orientation, but it is weaker than that found with the total sample. The relationship with Need for Structure is in the nonpredicted direction, but does not reach even a suggestive level of significance with a 2-tail test. Multiple regression on the relationships in the MIO condition ($R = .38$)

determine that only BQ-Tolerance for Merger makes a significant independent contribution to the prediction ($p = .035$).

In the MIL (more negative mood) condition, the predicted relationships with Boredom-Proneness and BQ-Unconscious Orientation are found significantly in the univariate analyses, and the predicted relationship with Need for Structure is found there at a suggestive level of significance as well. Multiple regression analysis on these relationships together ($R = .42$) shows that in this condition, BQ-Unconscious Orientation is the only variable making an independently significant contribution to the prediction ($p = .005$).

Enhancement of relationships with extrasensory MEE in MIO condition. See Table 3.

Table 3. Relationships of Predictors with extrasensory MEE as a function of Mood Conditions
(Predicted relationships only)

Predictor	MIO	MIL
Openness to Fantasy	.40***	.26*
Openness to Feelings	.38***	.23*
Openness to Esthetics	.35**	.02
BQ-Unconscious Orientation	.30**	.15
BQ-Tolerance for Merger	.44***	.03
Creative Occupation	.21*	.06
Need for Structure	-.25*	-.23*
Anxiety	-.24*	-.14

Vulnerability	-.24*	-.24*
ESP Possible	.31**	.05

The prediction of stronger predicted relationships in the MIO condition was strongly verified for extrasensory MEE. Six correlations are statistically significant in the univariate analyses, and the other four are suggestively significant, all in the predicted directions. When these ten variables are entered into multiple regression analysis, we find a relatively large overall relationship ($R = .635$). The independently significant variables are Openness to Feelings ($p = .02$), BQ-Tolerance for Merger ($p = .006$) and Vulnerability (negative) ($p = .04$).

In the MIL condition, four correlations drop to a suggestive level, and the other six do not approach significance. When these four variables are entered into a multiple regression analysis ($R = .317$), Openness to Fantasy ($p = .035$) and Vulnerability (negative) ($p = .05$) make significant independent predictions.

Cross-validation of empirically derived composite predictors. Backward-stepping stepwise multiple regression analysis was used to generate optimal composite predictors of subliminal MEE and extrasensory MEE. The cross-validation of this regression solutions was partially successful. The prediction of subliminal MEE by the extrasensory composite was successful: $r = .22, p = .025$, 1-tail. However the prediction of extrasensory performance by the subliminal composite fell short: $r = .14, p = .12$, 1-tail. This gives partial support for the idea that both MEEs function similarly as evidenced by similar responsiveness to the predictors sampled here.

Discussion

The failure to find an overall subliminal MEE is not entirely surprising, since the literature holds other failures to replicate and one would suspect other occasions have gone unreported, since cognitive and social psychologists are less likely to publish null

results than are parapsychologists. This is not a disappointment in terms of FST, since in those terms we would expect that affective response to subliminal exposure should be a bi-directional matter, sometimes in an approach (liking) direction and sometimes in an avoidance (disliking) one. Indeed, the MEE literature reports several instances in which an exposure effect is negative instead of positive. It is disappointing to find no correlation between subliminal and extrasensory MEEs. It may be of some interest that non-significant trends were found for correlations in opposite directions in the two Mommy conditions. In the MIO condition, the relationship was .17 ($p = .15$, 1-tailed) and in the MIL condition the relationship was reversed: -.17. Clearly the parallel functioning of subliminal and extrasensory processing cannot be assumed to always occur, as evidenced by Schmeidler's (1986) cases in which a significant positive relationship was not reported. The patterns of relationships with predictors drawn from previous literature as well as theoretical expectation led to the interesting conclusion that an extrasensory MEE is, if anything, more predictable than a subliminal MEE. The experiences of liking of these participants were effected by extrasensory targets, sometimes in a negative direction and sometimes in a positive one, as evidenced by the ability of various predictors to tease these directions of response apart. A greater openness to inner life, including aspects of experience thought of as particularly liminal, a belief that ESP as a source of information is legitimate, a tolerance for a suspension of emotional boundaries with others as well as a general tolerance for ambiguous situations, and a freedom from fearfulness all made a positive extrasensory response more likely in the univariate analyses, as predicted by FST. The measures with significant independent contributions (by multiple regression) to this complex of predictions measured an openness to the inner life of fantasy, tolerance for intense closeness with other persons and relative freedom from emotional distress.

The fact that all of the relationships with extrasensory MEE were stronger in the MIO condition is especially noteworthy. It appears that the inducement of greater calm, emotional security and well-being in that situation made the extrasensory information more salient, both positively and negatively, and this greater salience led to clearer discriminations between those directions by the dimensions just mentioned. This is in tune with other findings involving unconscious processing that suggest that persons more

actively process ambiguous and unconscious information when mood is positive (Avramova & Stapel, 2006; Fredrickson & Branigan, 2000; Pfaaf & Rotteveel, 2005) and cues for anxiety are low (Kruglanski, 1996; Pause, et al 2004). It may also be that the nature of the specific manipulation (merger vs. isolation) could have special importance in the case of extrasensory perception. Spontaneous cases of extrasensory knowledge suggest that we most commonly resort to extrasensory perception when the issue has to do with important other persons (Feather, 2006; Rhine, 1966). Given an implicitly heightened interest in intimate connection on the part of a participant, ESP as a domain may be of greater unconscious interest. These suggestions may be congruent with the different patterns of relationships found with the subliminal MEE. There in the MIO condition, BQ-Tolerance for Merger became much more salient for the employment of the subliminal cues. Those comfortable with merger became more positively responsive to the subliminal prompt, those uncomfortable with it moved away from it. Boredom-Proneness became more salient for the employment of subliminal cues under the MIL condition, as if there the subliminal domain lost its interest, causing those who are quick to bore to eschew it decisively.

Why should a mood manipulation exert such an effect upon other relationships? Theoretical work in cognitive/social/personality psychology is currently ongoing that is trying to specify the relative functioning of affective and cognitive features in unconscious thought (e.g. Zizak & Reber, 2003). It appears that in unconscious processing affective features may be sampled prior to cognitive ones, and set the stage for their usage in important ways. In FST also, it is of great interest to reach a greater understanding of how such unconscious thought works, what are its lawful stages, what tends to lead to what? Sequential assumptions may not generally hold true in this domain, since unconscious thought appears to be largely holistic in its functioning (Dijksterhuis, 2006), but if any advance can be made in understanding what features tend to be used more contextually and what others more focally, then we will advance in our goal of understanding when and how psi information enters into the flow of experience.

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