ESP Contributes to the Unconscious Formation of Preferences[1]

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Abstract: First Sight Theory (FST) proposes that ESP is an ongoing unconscious process that contributes to all common experiences, such as judgments, perceptions and feelings. To test this in the case of feelings of preference, we carried out two experiments examining the implicit expression of ESP information in preference ratings of pictures, as moderated by several variables specified by FST. The studies also attempted to demonstrate the influence of unconscious information (extrasensory and subliminal) upon mood, and the subsequent influence of mood upon a person's general orientation toward unconscious influences, including psi. In the first study, variables included 3 facets of openness and 2 facets of anxiety from the NEO-PI, involvement in a creative pursuit, belief that ESP is possible, tolerance for unstructured tasks, and a measure of tolerance for interpersonal merger. Mood was measured indirectly by the valence of autobiographical early memory. Most of the variables were related to ESP influence as predicted, and the relationships tended to be stronger when mood was positive. Multiple regression was used to condense these findings into a cluster of orthogonal variables that might be expected to be most reliable. The second study tested this composite variable in a new sample and validated it significantly. Again, relationships were stronger when mood was better. We also predicted that relationships should be stronger when the information is of more personal relevance – pictures containing human content vs. no human content – and this was confirmed as well. Each study also examined the effect of subliminal stimulation upon other preference trials (participants could not distinguish extrasensory and subliminal trials) and examined the power of variables found in previous research to predict subliminal response. The first study found limited validation for the subliminal predictions, and the second study found no validation for them. Participants' moods were influenced by subliminal cues of merger in the first study, but they were not influenced by comparable extrasensory stimuli in the second. Responses to extrasensorially pre-exposed and subliminally pre-exposed pictures were not correlated with each other in either study.
Keywords: First Sight Theory, implicit psi, sheep-goat, personality tests, ESP, Mere Exposure Effect

Two experiments tested some hypotheses generated by the first sight theory of psi functioning (FST). Both examined the influence of unconsciously-presented pre-exposure on how pictures were liked or disliked by experimental participants, using a variant of the Mere Exposure Effect (MEE) (Zajonc, 1968) protocol, in which the presentation of information tends to lead to its being more liked when presented again at a later time. The effect has been found to be more robust when initial exposure is

subliminal than when it is supra-liminal (Bornstein, 1989). We present pictures subliminally in these studies, but also "present" other pictures extrasensorially, with the assumption that this should also affect later judgements. Contrary to the normal assumption of MEE research, we assume, on theoretical grounds, that the effect with both sources of information is bidirectional, sometimes positive (exposure leading to more liking) and sometimes negative (leading to less liking), and sometimes prior exposure will seem to have no effect at all (Carpenter, 2012; Katz, 2001; Rao, 1965). Reversals of MEE have been reported (e.g., Kruglanski, et al., 1996), as with other subliminal effects, but they have tended to be reported as curiosities (or perhaps not reported at all) and not interpreted, while the basic effect is typically described as unidirectional (increased liking vs. no effect). Negative effects in parapsychology are understood to occur frequently, and are called "psi missing." FST assumes that positive (assimilative) and negative (disassimilative) responses both occur regularly with unconscious mental processes. Our studies attempt to predict the direction of response to both extrasensory and subliminal prior presentation upon later liking, using sets of easily available variables that are theoretically specified, some of which also have empirical precedent.

Prediction of ESP Performance

FST is a theoretical attempt to explain and organize the large body of findings that parapsychologists have reported, as well as offer a roadmap for planning future research, but it is also an attempt to say how psi works and what use it provides in everyday life. FST assumes psi is not primarily an odd and occasional type of experience and influence; it is almost entirely unconscious in its functioning and its usefulness lies mainly in the implicit guidance it provides for every bit of experience and action. It is only under rather unusual circumstances that its action can be consciously perceived. Normally its ongoing action is invisible.

FST assumes that virtually everything is available to be consulted by the unconscious mind as it continually works to construct the most useful and adaptive experiences and behaviors to meet life's ongoing concerns and developing situations. This includes information beyond the sphere of sensory experience and the present moment: The extrasensory and the extra-momentary are included. But of course, while everything is consulted, very little is directly expressed. We must unconsciously select what we use and determine how we will use it (to add to our experience or to subtract from it). These processes of selection and direction can only be discerned by arranging experiments in ways that allow us to see what things guide these processes and by examining the experiences and behaviors that result from them.

Ordinarily, events that are close in space and time to one's immediate situation are most pertinent for experiencing it optimally. For that reason, extrasensory information, although available, will generally be neglected and not expressed. However, if pertinent information is not available in the sensory moment, it may still be grasped and used. [1]

FST assumes that more personally and situationally salient information will be used and implicitly expressed more than less salient information. We addressed the issue of salience in these studies by

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1 Parapsychological experiments always make pertinent information unavailable in the sensory moment, and then examine its effects on the experience and action of the experimental participants (or events in the meaningful environment, in the case of PK).

using relatively pleasant pictures as extrasensory primes, with the assumption that pleasant information will generally be of interest, and by priming an interest in ESP by mentioning to participants (Ps) that it would somehow be tested in the experiment. In our second study we also distinguish between pleasant pictures that have human content and others that have no human content, assuming that human content is generally more salient.

Beyond the issue of information salience, FST assumes that individuals have different attitudes about accessing implicit, non-sensory information. Some will be inclined to use it; some will not. Artists and other persons who value creative work, for example, will tend to value the process of drawing meaning out of implicit hints and promptings, while others may be disinclined to use such things at all. FST calls this tendency to value and use implicit, marginally conscious experience *liminality.* In addition to creative openness, related aspects of liminality include the belief that such implicit information can be valid (the frequently validated "sheep-goat" variable (Schmeidler & McConnell, 1958; Storm & Tressoldi, 2017), one's degree of tolerance for unstructured situations that require such an intuitive approach, and one's attitude of openness toward inner experiences of fantasy and feeling). Openness as a personality trait has been reported to predict ESP scoring in several studies (e.g. Broughton, 2004; Holt, 2006; van Kampen et al., 1994), and artists have often been reported to score better than non-artists (e.g. Dalton,1997, Schlitz & Honorton, 1992). A final aspect of liminality that may bear upon the use of extrasensory information is a person's proneness to experience and perhaps to seek lowered interpersonal boundaries and a sense of merger with others.

FST also assumes that freedom from fear and anxiety should lead one to make more use of implicit, non-sensory information. Fear, current or anticipated, tends to constrict awareness to a narrow focus and exclude material that is merely implicit, unless the material directly pertains to what is feared (Bar-Haim et al., 2007; Palmer 1978, 1982, 1997).

In these studies, we measure these tendencies toward openness to implicit information, attitudes about creativity, comfort with unstructured situations and interpersonal merger, and tendencies toward anxiety, and use these measures to attempt to predict which persons will use extrasensory information by assimilating it and which will reject it and express it negatively instead.

Variables Predictive of Subliminal Response

A few individual-difference moderators of sensory MEE have been reported, and we used them as predictors here. These are the need for structure (Hansen & Bartsch, 2001), boredom proneness (Bornstein et al.,1990), and the need for cognition (Petty et al., 2008). Need for cognition related positively to MEE; the other two related negatively. Only need for cognition was reported to affect response in subliminal situations. Need for Structure and Boredom Proneness were studied with full sensory exposure, so we expected that they might not generalize to a subliminal presentation. Based upon the FST assumption of similar functioning of subliminal and extrasensory processes, we expected that subliminal effects might also be affected in a positive direction by openness, tolerance for merger, and creativity.

The Relation between Responses to Extrasensory and Subliminal Pre-exposures

FST asserts that all processing of unconscious information should generally tend to follow similar patterns. This accords with the finding of Schmeidler (1986) of a tendency for performance on subliminal and extrasensory tasks to be positively correlated when exposure times for subliminal material were "deeply subliminal" (exposure times of 100 ms or less) but not when exposures were longer, presumably permitting more conscious awareness of targets. Our subliminal exposure time of 100 ms is just within her criterion, and none of the studies she examined used implicit psi response, so our hypothesis was ventured cautiously.

The Moderating Effect of Mood

We expected that P's mood would affect the expression of implicit information but as a higher-order moderating variable. The effect of mood on cognition has received considerable attention in recent years. Initial studies found that positive mood tends to lead a perceiver to rely more upon general and stereotypical information (the forest) in forming judgments, while a negative mood leads to more reliance upon specific items of information (the trees). For a review, see Schwartz, Bless, & Bohner, 1991. Some later studies confirmed this general trend, but others, that made different issues salient, did not. A more recent round of studies has found that the matter is settled by expecting that a good mood acts as a "green light" that privileges whatever cognitive approaches the participant is otherwise oriented toward at the moment, while a bad mood is a "red light" that leads a participant to be less inclined to rely upon those general tendencies (Hunsinger et al., 2012; Isbell et al., 2016). In our experiments, we follow the FST principle that patterns characterizing other implicit cognitive effects should apply to psi as well; we expect that all relationships by which we otherwise predict positive vs. negative expression of implicit information will be confirmed more strongly when P is in a more positive mood. Our measure of mood in these studies was an implicit one, a rating of the valence of a very early memory given by P.

The Implicit Evocation of Mood

Mood itself is often described as a rather liminal thing, subtle and often without clear origin, but with the power to "color" experience and behavior. FST assumes that it arises out of preconscious processes that sometimes include psi. In both of these experiments we attempted to evoke more and less positive moods using implicit primes. In the first experiment, the presentation was subliminal, mixed in with the pictures being flashed subliminally and extrasensorially. In the second study, we presented these primes extrasensorially, as described below. We tried to evoke a positive mood with the words "mommy and I are one" (MIO), and a negative mood with the words "mommy is leaving" (MIL). This "psychodynamic activation technique" has been shown to affect mood in several studies (Bornstein, 1990; Hardaway, 1990; Silverman, Lachman & Millich, 1982; Silverman & Weinberger, 1985; Weinberger & Smith, 2011). Since we planned to use mood as a moderating variable, in the event that this manipulation did not affect mood as hypothesized, we planned to use our implicit mood assessments and divide Ps empirically into more and less positive groups.

Study One

Participants

Ninety-five participants took part, but computer malfunctions caused slower refresh rates than 100 Hz in 17 cases, so they were excluded. Of the remaining 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.

Procedure

Unless otherwise noted, details of design and procedure are the same for Studies One and Two.

Individual testing was conducted by an experimenter (E) 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 (100 Hz), such that brief exposures of stimuli would be possible. A masking stimulus (a fractal design) 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, drawn from the top 35% of the population in terms of valence. The 50 pairs were randomly divided into two sets of 25 pairs to be used as subliminal and extrasensory targets with paired controls. Order of different extrasensory/subliminal presentations was determined for each session using the E-Prime random function which samples the computer's internal clock.

After giving informed consent, each person filled out several individual-difference questionnaires and responded to a packet of further questions. After being seated at the experimental computer, Ps were left alone to view a 5-min video of pictures of galactic structures taken from the Hubble telescope, accompanied by gentle music intended to be pleasant and relaxing. Then E returned and told Ps that the test to follow would involve both extrasensory and subliminal information in a way that would be explained later; the computer would first present 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. Following a series of these exposures, they would be asked for some other information, after which they would give 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, and this also would be explained after the experiment was finished. Then Ps were asked to fixate on the center of the screen at a large **X** while the colored fractal pattern would be repeatedly exposed. Following a white screen with a centered **X,** one of three kinds of information was flashed for 100 ms, immediately followed by a 2-sec exposure of the fractal design. After this, the blank screen with fixation point reappeared for 1 sec. The sequence was repeated 155 times. The briefly presented information was either one of the two mommy messages (MIO or MIL) subliminally exposed on five occasions, or one of 25 randomly selected pictures exposed subliminally on five occasions each, or one of 25 pictures

exposed extrasensorially (completely occluded) once each. Which mood manipulation P received was determined by the session sequence as follows: ABBA, BAAB, etc. The ESP stimuli were exactly like the subliminal stimuli except that the pictures were completely covered by an opaque black rectangle so that absolutely no information is available if the array is viewed at full exposure (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, subliminal-"mommy" and blocked-extrasensory – was randomly 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, Ps were told that the experimenters were interested in early memory and were asked to call in the experimenter who would explain further what was being asked. When the experimenter returned, Ps were told: "Please tell me the earliest memory that you can bring 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 Ps 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. The mood 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). Ps were then presented with 50 pairs of pictures and asked to select the one of each pair that he or she preferred. Twenty-five of the pairs contained a subliminally-exposed picture with a matched control picture matched for valence and intensity, and 25 contained an extrasensorially-exposed picture with control. Ps were asked to make a choice for every pair, even if the difference in preference was very slight.

Following completion of the preference task, Ps were 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-expectation or not; in either case they were told to draw no definite conclusions about themselves from a small, exploratory test, in reference to things which science still rather poorly understands. After answering any questions, and thanking P for helping, the experimenter ended the session.

Measures

Dependent Variables

Preference effects.

1. A P's preference score in response to subliminal pre-exposure (subliminal score for short) was equal to the number of times that P preferred the pictures to which they had been subliminally exposed previously. Scores could range from 0 to 25, and MCE was 12.5.
2. The preference score with extrasensory pre-exposure (extrasensory score) was the same: the number of times that the picture preferred was the one that had been randomly picked to be an ESP target, and "presented" in a completely occluded way. Scores could range from 0 to 25, and MCE was 12.5.

Mood. Our measure of mood was implicit, rather than self-report, and was taken from a judge's ratings of the early memories. The judge was a social psychologist with broad experience in such ratings, who had no other involvement in the study. Ratings ranged from 3 (very sad) to +3 (very happy).[2]

Between-participant independent variables. Ps were randomly assigned to two mood-manipulation groups. One was subliminally exposed to the phrase: "Mommy and I are one" (MIO), and the other to "Mommy is leaving" (MIL).

Within-Participant Independent Variables

1. 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."
2. Fearfulness was assessed by the Anxiety and Vulnerability subscales[3] of the NEO-PI personality inventory (Costa & McCrae, 1992). These two facets were expected to be most pertinent to the response to unknown extrasensory material, since Anxiety represents general feelings of fear/discomfort and Vulnerability shows a poor response to surprise and stress.
3. Openness to liminal experience was assessed by Openness to Fantasy, Openness to Aesthetics, and Openness to Feelings subscales of the NEO-PI.
4. Need for Structure was assessed by the 11-item Personal Need for Structure Scale (Neuberg & Newsom, 1993).
5. Need for Cognition was measured by the 18-item Short Need for Cognition Scale (Caccioppo, Petty & Kao, 1984).
6. Boredom Proneness (Bornstein, Kale & Cornell, 1990) 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.[4]
7. Tolerance for Merger was an empirically-derived factor scale from the Short Boundary Questionnaire (Harrison et. al, 2005). We administered this questionnaire in an exploratory way, and factor-analyzed responses (varimax rotation, eigenvalue = 1.0) to see if any of the factors might be especially pertinent to FST. Most measured some aspect of dysfunction, and one appeared to be a redundant expression of creative openness. This fifth factor, however, seemed to offer something theoretically pertinent and not otherwise assessed. Example items: When something happens to a friend of mine or a lover, it is almost as if it happened to me; In my dreams, people sometimes merge into each other or become other people.
8. Creativity was assessed by the yes-or-no response to the following question:
9. Are you currently engaged in some creative/artistic work?

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2 Implicit measures of unconscious motives have been found to be much more predictive of actual behavior in most non-self-conscious situations, than conscious self-report measures, and much more validly responsive to non-conscious manipulations (Woike, 2008),
3 Facet scales of the NEO-PI were used to assess pertinent aspects of anxiety and openness, rather than global factor scores, since the facets chosen were particularly relevant according to theory, and considerable evidence shows that facets produce more reliable predictions: e.g. Anglim, et al. (2020).
4 These items were taken from Bem (2001).

Hypotheses

1. Subliminal preference scores and extrasensory preference scores will be positively correlated.
2. Mood will be more positive in the MIO condition than in the MIL condition.
3. Preference scores with subliminal pre-exposure will vary as a function of:
    a. Need for Cognition
    b. Openness to Feelings
    c. Openness to Aesthetics
    d. Openness to Fantasy
    e. Creativity
    f. Tolerance for Merger
    g. Need for Structure (negatively)
    h. Boredom Proneness (negatively)
 4. Preference scores with extrasensory pre-exposure will vary as a function of:
    a. Openness to Feelings
    b. Openness to Aesthetics
    c. Openness to Fantasy
    d. Belief ESP possible (in the conditions of the experiment)
    e. Creativity
    f. Tolerance for Merger
    g. Anxiety (negatively)
    h. Vulnerability (negatively)
    i. Need for Structure (negatively)
5. The salience of attitude/motivation predictors on preference scores in response to subliminal and extrasensory pre-exposure will both be enhanced in the MIO condition relative to the MIL condition.

Analyses

    We analyzed data in several stages. First, we compared the strength of preference effects due to either subliminal or extrasensory exposures compared to chance expectation, using one-sample *t*-tests, and examined the effect on mood of the MIO-MIL manipulation, using a *t*-test comparing the mean mood scores of the two message-exposure groups. Since the direction of relationship was specified beforehand, one-tailed test was used. We had no hypotheses in regard to overall preference effects but did expect that mood would be better with the MIO than with the MIL exposures. Then we conducted an ANOVA, with the between-participant variables of gender and mood-induction condition (MIO or MIL), and the within-participant variable of exposure type (subliminal or extrasensory). We hypothesized no significant main or interaction effects. Then, we tested the various hypothesized relationships with Pearson *r*. And finally, in order to generate the most efficient predictive composite for our second study, and to resolve the problem of multiple analysis with correlated variables, we subjected variables showing significant univariate relationships to two stepwise-multiple regression analyses – one for the extrasensory trials, one for the subliminal. These resulted in smaller sets of variables each of which contributed independently to an optimal prediction.

Results of Study One

Mere exposure effects. Neither subliminal nor extrasensory primes produced an overall prefer-ence statistically significant at $p < .05$. Thus, we found no simple "mere exposure effects" (increased liking due to pre-exposure). Both mean scores were very close to MCE.

Effect of mood manipulation on mood. Mood scores were significantly more positive in the MIO condition than in the MIL condition, confirming the "psychodynamic activation effect": ($t = 2.29$, p (1-tail) = .012, Cohen's $d = .52$).

Relation between preference scores in response to extrasensory and subliminal pre-exposure. No relationship was found. The correlation was virtually nil: $r = -.004$. The hypothesis of a positive rela-tionship was not confirmed.

Main and Interaction effects of stimulus-type, gender and mood manipulation. As expected, none of the main or interaction effects of these between- and within-participants variables were signif-icantly different from chance.

Predictive relations with pictures subliminally pre-exposed. Of the eight variables predicted to affect the subliminal preference scores, Need for Cognition and Boredom-Proneness are significant in the predicted directions. The relationships with facets of NEO-PI Openness, 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 variables independently contributing significantly to the prediction, the two that yielded significant univariate tests were subjected to a multiple regression analysis with criterion for inclusion and exclusion set at .05, against the criterion of preference scores with subliminal pre-ex-posure. This resulted in the original r of .214 ($p = .03$) with only Need for Cognition being independently significant.

Predictive Relations with Pictures Extrasensorially Pre-Exposed. Of the 9 variables expected to predict response to extrasensory pre-exposure, 7 are significant at the level of .05 or lower, one is suggestively significant, and one is not significant, using 1-tailed tests. Positive relationships are found, as predicted, with Openness to Fantasy, Openness to Aesthetics, Openness to Feelings, Belief that ESP is Possible, and Tolerance for Merger. Negative relationships are found as predicted with Need for Struc-ture, Anxiety (suggestive) and Vulnerability. Creativity showed a non-significant trend in the predicted direction.

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

Table 1
Relations of Predictors to Subliminal scores

Predictor	Subliminal Pre-Exposure
Need for Cognition	.21**
Need for Structure	-.02
Boredom-Proneness	-.20**
Openness to Feelings	.04
Openness to Fantasy	.06
Openness to Esthetics	.10
Creative Activity	.11
Tolerance for Merger	.17

**p<.05, 1-tail

Table 2
Relations of Predictors to Preference scores with Extrasensory Pre-exposure

Predictor	Extrasensory Pre-exposure
Need for Structure	-.22**
Openness to Fantasy	.33***
Openness to Aesthethics	.20**
Openness to Feelings	.30***
Anxiety	.16*
Vulnerability	-.23**
Belief ESP Possible	.19**
Tolerance for Merger	. 26**
Creative Pursuit	.11

*p<.10, 1-tail   **p<.05, 1-tail ***p<.01, 1-tail

Subliminal and extrasensory effects moderated by mood manipulation.

Moderation of mood conditions on relations with response to subliminal pre-exposure. A mixed picture emerges. Need for Cognition, which was significant for the overall sample, is slightly stronger in the MIO (more positive mood) condition. Boredom-Proneness was also significant overall, but this relationship was found to come mostly from the MIL condition (in the context of a more negative mood). Tolerance for Merger, which was not significant overall, is related to preferences in the condition facilitating a positive mood (MIO). The relationship with Need for Structure is marginally significant in the predicted direction in the MIL condition, but shows a trend toward a reversal in MIO.

Table 3
Relationships of Predictors with Subliminal Pre-exposure Scores as a Function of Mood Conditions

Predictor	MIO	MIL
Need for Cognition	23*	.19
Need for Structure	-.24 (reversed)	.22*
Openness to Feelings	.12	-.04
Openness to Fantasy	.07	.01
Openness to Aesthetics	.09	.14
Boredom-Proneness	-.15	-.29**
Tolerance for Merger	.28**	.03
Creative Occupation	.14	.06

*$p<.10$, 1-tail   **$p<.05$, 1-tail ***$p<.01$, 1-tail

Moderation of relationships with extrasensory pre-exposure. The expectation of stronger predicted relationships in the MIO condition was strongly confirmed for preference scores in the extrasensory condition. Six correlations are statistically significant in the univariate analyses, and the other four are suggestively significant, all in the predicted directions.

In the MIL condition, four correlations drop to a suggestive level and the other six do not approach significance. In general, it may be that the measures of *liminality* (inner openness, tolerance for merger, ESP-possible and creative activity) are more effective when mood is positive. Measures of discomfort/anxiety seemed to be about equally effective in either mood.

Discussion of Study One

The failure to find an overall subliminal Mere Exposure Effect (a general preference for pre-exposed material) is not entirely surprising, since the literature reports other failures to replicate (e.g., Qian, et al., 2017). The relatively short period of delay between initial exposure and assessment of preferences may

have lessened the likelihood of obtaining a simple mere exposure effect, since longer delays have been found to lead to stronger effects (Bornstein, 1989). The failure to find simple overall effects of either subliminal or extrasensory exposure is not a disappointment in terms of FST, since we expected that responses to such exposures are most usefully thought of as bi-directional.

Table 4
Moderation of Mood Conditions on Relationships of Predictors of Response to Extrasensory Pre-exposure

Predictor	MIO	MIL
Openness to Fantasy	.40***	.26*
Openness to Feelings	.38***	.23*
Openness to Aesthetics	.35**	.02
Tolerance for Merger	.44***	.03
Belief ESP Possible	.31**	.05
Creative Pursuit	.21*	.06
Need for Structure	-.25*	-.23*
Anxiety	-.24*	-.14
Vulnerability	-.24*	-.24*

[a]*$p<.10$, 1-tail   ** $p<.05$, 1-tail *** $p<.01$, 1-tail

The failure to find a correlation between subliminal and extrasensory scores may suggest that the relatively long exposure times used in the study may not adequately represent the "deeply subliminal" studies reviewed by Schmeidler (1986) or that implicit measures may not follow the same patterns as those with target-identification tasks. It may also be that this within-Ps design, which explicitly presented all participants with both subliminal and extrasensory material, and featured the extrasensory element especially in advertisement, inadvertently pitted one source of information against the other, and this rendered them meaningfully non-equivalent in the estimation of the participants (Rao, 1965).

The correlational findings of Study One, particularly in regard to extrasensory effects, were taken as strong enough to warrant further exploration. We undertook a second study primarily to see if these findings could be confirmed in new data.

Study Two

Participants

Ninety- four participants took part. Seventy-two were undergraduate students at Liverpool Hope

University who earned course credit for participating, and 22 were volunteers at the Rhine Research Center in Durham, NC. Seventy-five Ps self-identified as female. Ages ranged from 18 to 68, with a mean of 31.5 and a mode of 19. Data collection ended by pre-agreement when a given semester ended at Liverpool Hope.

Procedure

Most details of procedure were identical to those in Study One. The following things were different:

1. The messages designed to influence mood (MIO and MIL) were randomly presented to each participant five times as before, but in Study Two they were presented in fully blocked, extrasensory mode, rather than subliminally. We wanted to see if these messages could influence mood through an extrasensory "exposure" as well as through a subliminal exposure.
2. Pictures from the IAPS were used again as subliminal and extrasensory targets and controls. Twenty-four matched pairs of positive pictures were drawn from the 50 pairs used in Study One. Twenty-four additional matched pairs that were relatively unpleasant (bottom 35 % in terms of IAPS valence ratings) were also included for exploratory purposes.[5] Since Study Two was mainly intended as a replication for Study One, which used only positive pictures, these negative targets will not be discussed further in this report.
3. For each session, 12 of each set of positive pairs were selected randomly and automatically to be used as extrasensory exposure and controls, and the other 12 pairs were selected for subliminal exposure and controls. In addition, six, or half of each set were selected to have human content (whole figures, faces and other parts of persons) and half had non-human content (objects, animals, landscapes). Human content is expected to be generally more salient than non-human content, so it is expected to more clearly express scoring effects. As before, for each P the subliminal pictures were flashed and then masked 5 times each, one of the Mommy messages was flashed (and completely blocked) five times, and the ESP targets were flashed (blocked) and masked once each. Order of picture valence, human vs. non-human content, type of presentation (subliminal or extrasensory), and individual picture selection were determined randomly for each P using the E-Prime random function, which samples the computer's internal clock.

Measures

Dependent Variables. Extrasensory and subliminal preference scores were calculated as before, except that with the smaller number of pictures presented, MCE was 12. For the positive-valence and negative-valence subsets, MCE was 6. And for the human and non-human subsets of each, MCE was 3.

Mood was measured as before, by ratings of Ps' early memories carried out by the rater used in Study 1.

Independent Variables. Independent variables were the same as those used in Study One, with one partial exception. The factor of the Boundary Questionnaire used in Study One depended upon the

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5 Previous research has indicated that subliminal ME effects with negatively-valenced stimuli may tend to be either less robust (William, 2003) or reversed in direction (Young & Claypool, 2010), so their inclusion here was purely exploratory.

factor analysis of that set of responses. We planned to conduct a new factor analysis on the new data, with the expectation that similar factors would emerge. However, we found that in the new data the factor structure was not closely duplicated. Because of this we approximated this factor (Tolerance for Merger) by summing responses to the items that were significantly loaded on it in Study One.

Analyses in Study Two focused on variables that had been found to be significant predictors in Study One. Our primary analyses involved the composite variables determined by multiple regression from the data of Study One. To obtain a complete picture, in addition to these composite predictors, we also planned to test the replication of all predicted variables in Study One that were found to show significant univariate relationships. One-tailed p values were used to test all univariate hypotheses.

Hypotheses

1. Mood will be more positive in the extrasensory MIO condition than in the MIL condition.
2. We did not expect to find overall preference effects with either subliminal or extrasensory exposure, and we did not expect that the extrasensory pre-exposure and the subliminal pre-exposure scores would significantly correlate with each other.
3. All of our hypotheses in regard to extrasensory and subliminal preference scores involved positive-valence pictures only, and are divided into primary and secondary expectations. Primary expectations involved the regression solutions in Study One, secondary expectations involved all variables that showed significant univariate relationships to preference scores in Study One.

    a. The primary prediction for subliminal scores is that they should vary as a function of Need for Cognition. This relationship is not expected to be moderated by participant mood, but we thought (on theoretical grounds) that it would be stronger for human pictures.
    b. The secondary predictions regarding subliminal scores for participants with more positive mood was that scores should vary as a function of Need for Cognition, and Tolerance for Merger.
    c. In regard to participants with more negative mood, preference scores following subliminal pre-exposure should be predicted by Need for Structure and Boredom Proneness (negatively).
    d. The primary prediction for preference scores following extrasensory exposure was that they should be predicted by a weighted combination of Openness to Fantasy, Tolerance for Merger, and Vulnerability (negative). We also predicted that this relationship would be stronger when Ps are in a positive mood, and when human pictures are involved.
    e. The secondary predictions for both mood groups pooled, are that preference scores with extrasensory pre-exposure should vary as a function of Openness to Fantasy, Openness to Esthetics, Openness to Feelings, Belief ESP possible, Tolerance for Merger, Need for Structure (negative), and Vulnerability (negative). We expected these relationships to be stronger with human pictures.
    f. In the positive mood group, extrasensory scores were expected to be more strongly predicted by several variables, and relationships were expected with Openness to Fantasy, Openness to Feelings. Openness to Esthetics, Tolerance for Merger, Creative Occupation. Belief

ESP Possible, Need for Structure (negative), and Vulnerability (negative). All of these were expected to be stronger with human pictures.

g. In the negative mood group, extrasensory scores were expected to be less strongly predicted, and relationships were expected with Openness to Fantasy, Openness to Feelings, Need for Structure (negative), and Vulnerability (negative). We expected stronger relationships with human content.

Results

Mood manipulation. The extrasensory presentation of MIO and MIL statements did not influence the mood of participants (t = -1.04, p = .30, d = .22). Because of this failure of our manipulation to affect mood, we divided the mood scores into positive (42 cases) and negative (30 cases) groups, omitting 16 cases rated neither positive nor negative. This grouping was used for analyses comparing positive and negative mood groups.

Main and Interaction Effects of Mood Manipulation, Type of Exposure and Picture Content (Human/Non-Human) upon Picture Preference Scores. ANOVA of preference scores with the between-participant variable of Mood and the within-participants variables of Content (human or non-human) and Exposure (sensory or extrasensory) did not yield any significant main or interaction effects.

Overall preference effects. As reported above with ANOVA, no overall effects were found for either type of exposure, repeating the negative results of Study 1. Both mean preference scores were very close to chance expectation. The correlation between the two was virtually nil: r = .01.

Prediction of response to subliminal pre-exposure. The primary prediction was that scores would be predicted by Need for Cognition (the only variable emerging from multiple regression analysis). We expected that it might be most effective in predicting response to human pictures but not superior with positive mood. Results are all non-significant, as given in Table 5.

The secondary predictions involved other variables that had significant univariate relationships in Study One, when moods were positive and negative. All results are non-significant, as given in Table 6.

Table 5
Correlations of Subliminal Scores and Best Predictor of Study 1 (Need for Cognition)

All Cases N = 92	Positive Mood N = 42	Negative Mood N = 29	Human Content N = 92	Non-Human Content N = 92
-.11	-.14	-.13	-.13	-.04

Table 6

Subliminal Scores as Predicted by Significant Variables in Study 1

	All Cases	Positive Mood	Negative Mood
Tolerance for Merger	-.113	.079	-.312
Need for Structure	.044	XXX	-.122
Boredom-Proneness	.106	.119	.230

Prediction of Extrasensory Pre-Exposure Effect. The primary prediction was that preference scores for ESP pre-exposed pictures would be predicted by the composite variable composed of Openness to Fantasy, Tolerance for Merger, and Vulnerability. We also expected that this prediction would work best when mood is good and when human picture content is involved. Results were nicely confirming. See Table 7.

Table 7

Prediction of Extrasensory Pre-Exposure Effect by Composite Variable Drawn from Study 1

	ALL CASES N=92	POSITIVE MOOD N = 41	NEGATIVE MOOD N = 30	HUMAN PICTURES N=92	NON-HUMAN PICTURES N = 92
r	.29	.38	.23	.34	.05
p 1-tail	.003	.007	.11	.0005	NS

In order to clarify the differences found, we carried out an ANOVA of ESP preference scores with mood, picture content and the composite predictor as a dummy variable as independent variables. The main effect of the composite variable was confirmed, but no interactions were significant. Therefore, we can say that the observed effect came primarily from the positive mood group and on human content, but the differences in relationship strength between the levels of mood and content were not significant.

The secondary predictions for extrasensory scores for all moods combined were positive relationships with Openness to Fantasy, Openness to Esthetics, Openness to Feelings, Belief ESP Possible, and Tolerance for Merger, and negative relationships with Need for Structure and Vulnerability. Relationships were expected to be stronger with human content. Results are given in Table 8.

With human/not-human content pooled, significant relationships were found with Openness to Feelings, Openness to Fantasy, Belief ESP Possible, and Tolerance for Merger. Trends in the predicted direction ($p < .10$) were found for Openness to Esthetics and Creative Occupation. Vulnerability and Need for Structure showed no relation. Relationships were generally stronger when only pictures with human content are considered: All relationships significant with pooled groups were more strongly so, Need

for Structure now showed the predicted negative relationship, Creative pursuit is nearly significant, and Vulnerability showed a trend in the predicted direction. With non-human pictures, only Openness to Feelings gave a significant effect, Tolerance for Merger showed a trend, and Need for Structure showed a positive (opposite to prediction) relationship that would be significant with a two-tailed test ($p = .028$).

Table 8

Relationships Between Predictor Variables and Extrasensory Scores for Both Mood Groups Pooled

	ALL PICTURES	**HUMAN**	**NON-HUMAN**
OPENNESS TO FANTASY	.22 $P = .02$	.24 $P = .01$	.05
OPENNESS TO ESTHETICS	.15 $P = .07$	.19 $P = .03$	.01
OPENNESS TO FEELINGS	.27 $P = .005$	.12 $P = .03$	.24 $P = .01$
BELIEF ESP POSSIBLE	.22 $P = .02$	.21 $P = .02$	.08
CREATIVE OCCUPATION	.13 $P = .10$	.16 $P = .06$	.02
TOLERANCE MERGER	.25 $P = .009$	.18 $P = .04$	.15 $P = .07$
NEED FOR -STRUCTURE (-)	-.03	-.26 $P = .006$	.23 (reverse)
VULNERABILITY (-)	-.02	-.14 $P = .09$	.12

Secondary predictions for participants in positive moods were positive relationships with all three Openness facets, Tolerance for Merger, Belief ESP Possible, and Creative Pursuit, and negative relations with Need for Structure and Vulnerability. Weaker relationships were expected for the negative mood group, with significance expected only for Openness to Fantasy, Openness to Feelings, Need for Structure and Vulnerability.

Results are given in Table 9. Participants in a positive mood showed significant relationships with the 3 facets of Openness, and a trend with Tolerance for Merger. Those with negative moods showed significant relationships with Tolerance for Merger.

One final analysis was carried out *post hoc* to obviate concerns about over-analysis of data using non-orthogonal variables. Extrasensory scores, pooled across levels of Content and Mood, were analyzed with the variables in Table 8, using stepwise multiple regression, as was done in Study One, to find the most efficient composite predictor using only variables contributing independently to the prediction. In this case, the variables of Openness to Feelings, Belief ESP Possible, and Tolerance for Merger were included, with the multiple *R* against the criterion of .42.

Table 9
Relationships Between Predictors and Extrasensory Scores for Positive and Negative Mood Groups

	Positive Mood	Negative Mood
	n = 42	*n = **30***
Openness to Fantasy	.37***	.23
Openness to Esthetics	.28**	.16
Openness to Feelings	.51****	.02
ESP Possible	.13	.16
Creative Occupation	.18	.05
Tolerance Merger	.24*	.36**
Need for Structure	-.10	.07
Vulnerability	.04	.18

*p<.10, 1-tail **p<.05, 1-tail ***p<.01, 1-tail ****p<.0005, 1-tail

General Discussion

We have been investigating processes of unconscious thought and the contributions that extrasensory and subliminal considerations make to those processes. Neither source of influence had a consistent effect upon our participants in these studies to the point that they would show an overall tendency to like less or like more the material to which they were pre-exposed subliminally or extrasensorially. However, some clusters of attitudes and emotional considerations were identified that moderated the directions in which participants took those influences. We succeeded better in predicting extrasensory than subliminal influence. This might appear to be an ironic finding to anyone who considers ESP to be even more preposterously unlikely than subliminal perception, but it is the finding that we have.

Pre-exposing participants to the subliminal *suggestion* (content blocked, i.e., extrasensory) of a picture appears to influence their subsequent tendency to like or dislike that material when it is seen again. The influence is bidirectional, sometimes assimilative and sometimes disassimilative. If persons are particularly open to their fantasies and feelings, if they believe that extrasensory perception is a valid source of information, if they are comfortable with intense closeness with other people, and if they

are characteristically interested in their internal liminal processes, then the influence tends to be a positive one – they like the material a bit more than they would if they had not been unknowingly exposed to the suggestion of its presence. If they are not open to their feelings and fantasies, if they believe that extrasensory perception is impossible, if they dislike being too close to others, and if they have no interest in their potentially creative inner processes, then they will tend – not to simply ignore – but to relatively dislike the material that has been suggested to them extrasensorially. Presumably these processes go on in everyday life continually, or they could not have been captured in our laboratories. The fact that positive mood and more meaningful content generally potentiate these influences shows how contextually subtle and complex unconscious thought is. Both the composite measure and the general attitudes of openness as measured by the NEO-PI are more discriminative when mood is positive and extrasensory information is more salient. In a more negative state, or with less important content, these attitudes fade in importance as unconscious thought presumably shrinks its consideration to matters closer to sensory experience and conscious concerns. If the patterns found here prove to be reliable in new data, we will be learning interesting things about how unconscious thinking shifts its criteria by which to employ extrasensory information depending upon emotional state, disposition and relevance of information.

FST predicts that more personally relevant information will be more strongly considered for assimilation/disassimilation than less relevant information. As highly social creatures, human information should be generally more salient for us than non-human information, and we did find that our primary predictor (the composite drawn from Study One) and most of the individual predictors as well, were more effective in predicting the expression of human content than non-human.

We failed to confirm some initial hypotheses. Based upon prior research, we expected to find a simple Mere Exposure Effect using subliminal exposures. Extrasensory "exposure" of the "mommy" stimuli did not influence mood as subliminal exposures had done previously. Subliminal scores and extrasensory scores did not correlate positively as found by Schmeidler (1986).

Failing to find an overall subliminal Mere Exposure Effect in either study may be attributable to the relatively short period of time elapsing between subliminal exposure and test (Bornstein, 1989), or it may have to do with the priming provided by the information that the experiment involved both extrasensory and subliminal information which may have provoked a greater implicit interest in the extrasensory aspect. We did find that it is useful to think of the subliminal Mere Exposure Effect as bidirectional, as FST suggests. This helps us understand why (as in Study One) subliminal priming did not merely fail to elicit greater liking for participants low in need for cognition, but moved them toward avoidance of the information.

We do not know why the extrasensory suggestion of the "mommy" messages in Study Two did not influence mood the way subliminal presentation did in Study One. It may be that unconscious thought selectively expresses mood-evoking information more if it promises to be more imminently actual – and a subliminal stimulus is closer to an actual developing event than is an extrasensory one. In general, this would imply that a basic hypothesis of FST – that subliminal and extrasensory information should be processed in similar ways – needs to be refined. It appears that sometimes in a given situation they

will be handled differently. Of course, this is also implied by our finding that different moderating variables influence their expression. If an internal contrast effect is to blame for this failure this could be determined by further research using a between-participants design that exposes participants to either subliminal or extrasensory information but not both.

The failure of subliminal and extrasensory scores to be correlated may stem from the fact that a relatively long exposure time (.1 sec) was used. This level of exposure is at the upper limit between the set of studies reviewed by Schmeidler (1986) that she defined as "deeply subliminal" as opposed to "marginally subliminal." She noted a tendency toward positive correlation in the former group and negative correlation in the latter. Further study using shorter exposure times is needed. Perhaps the best paradigm would use "objective thresholds," in which the exposure is so brief that not even a flicker can be discerned above chance expectation (Snodgrass, 2001, 2006).

A weakness of this study is the *ad hoc* nature of Tolerance for Merger, drawn from Boundary Proneness items. If the construct is as important as our results suggest, it would be worthwhile to develop a psychometrically adequate measure of it, perhaps building upon the items found here.
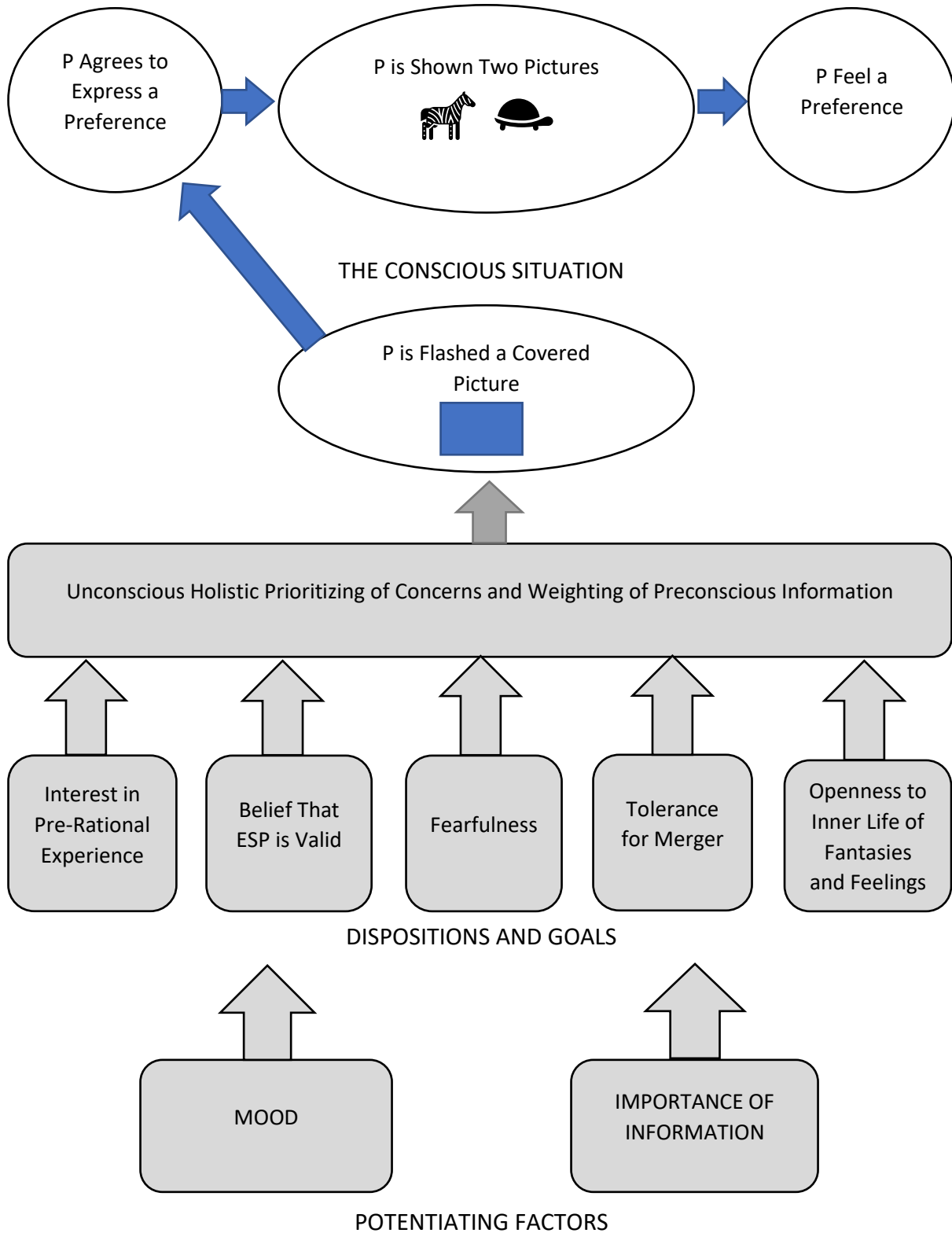
Overview

We are working toward a model for the place of extrasensory and other unconscious information in the processes of unconscious thought by which we produce our behavior and our experience. The following Figure 1 sketches a preliminary picture of this complex, contextualized process. It presumes that our unconscious thinking is always purposive, and that the purposes that are regnant at any moment have been called up by many things, including dispositional attitudes, and suggestions present in the situation, and that one's emotional posture, or mood, in the moment makes all of those things more or less operative. And finally, it seems that the information being accessed by psi must be sufficiently meaningful and important for it to be selected, processed and expressed at all.

The top level of Figure 1 represents the situation as our participants consciously experienced it. After watching ambiguous flashes of light and abstract patterns on a monitor for a while, they were asked to provide a personal early memory and then asked to express a preference between pictures in all pairs that were then presented. They consented, then worked through the pairs, selecting pictures that seemed somewhat more pleasing than their companions and expressing each preference with a key stroke. That is all. The situation was more complex for the experimenters, who had contrived a set of things intended to unconsciously sway those preferences and predict the ways in which they would be swayed. Considering only the extrasensory aspect of the situation, participants were exposed to brief flashes of opaque rectangles that completely covered pictures that were present beneath them. Some of the pictures had human content and some did not. Early memories were used to assess momentary mood and responses were gathered to a series of questions, that placed participants on scales that theory and previous research suggest should predict the direction of response to the extrasensory information – whether it would be included positively or negatively in the experience of liking to be aroused by the pictures.

Figure 1

The Implicit Development of a Preference between Stimuli, as Mediated by Dispositional Goals in the

Context of Mood and Importance of Extrasensory Information

P Agrees to Express a Preference

P is Shown Two Pictures

P Feel a Preference

THE CONSCIOUS SITUATION

P is Flashed a Covered Picture

Unconscious Holistic Prioritizing of Concerns and Weighting of Preconscious Information

Interest in Pre-Rational Experience

Belief That ESP is Valid

Fearfulness

Tolerance for Merger

Openness to Inner Life of Fantasies and Feelings

DISPOSITIONS AND GOALS

MOOD

IMPORTANCE OF INFORMATION

POTENTIATING FACTORS

The experimenters expected that an open and receptive mood would potentiate unconscious goals about making access to unconscious information and the participant would express those goals by directing unconscious interest accordingly. For example, someone more typically open to the inner life of feelings would turn positively to subtle indications of emotional material, whereas someone characteristically inclined to not consult such things would turn with a negative interest to that material. The positive and receptive mood would implicitly encourage the participant to express such proclivities more strongly. The experimenters also expected that more salient extrasensory information would be more strongly attended to unconsciously than less salient information and be more likely to show the effects of personal proclivities toward inclusion or exclusion.

We are in a raw beginning place in this elucidation of unconscious thought and the place of extrasensory processes within it. We are encouraged with the evidence that we have so far that extrasensory processes do have an ongoing and meaningful, though consciously invisible, place in our most intimate and commonplace psychological functioning.

References

Angim, J., Horwood, S. Smillie, L. D., Marrero, R. J. & Wood, J. K. (2020). Predicting psychological and subjective well-being from personality: A meta-analysis. *Psychological Bulletin, 146,, 279-233. https://doi.org/10.1037/bul0000226*

Bar-Haim, Y., Lamy, D., Pergamin, L., Bakermans-Kranenburg, M. J. & van IJzendoorn, M. H. (2007). Threat-related attentional bias in anxious and nonanxious individuals: A meta-analytic study. *Psychological Bulletin, 133*, 1-24.

Bem, D. J. (2011). Feeling the future: Experimental evidence for anomalous retroactive influences on cognition and affect. *Journal of Personality and Social Psychology, 100*, 407-425.

Bornstein, R. F. (1989). Exposure and affect: Overview and meta-analysis of research, 1968-1987. *Psychological Bulletin, 106*: 265-289.

Bornstein, R. F. (1990). Critical importance of stimulus unawareness for the production of subliminal psychodynamic effects: A meta-analytic review. *Journal of Clinical Psychology, 45,* 201-210.

Bornstein, R. F., & D'Agostino, P. R. (1992). Stimulus recognition and the mere exposure effect. *Journal of Personality and Social Psychology, 63,* 543-552.

Bornstein, R. F., A. R. Kale, & Cornell, K. R. (1990). Boredom as a limiting condition on the mere exposure effect. *Journal of Personality and Social Psychology, 58*(5): 791-800.

Broughton, R. S. (2004). Exploring the reliability of the "presentiment" effect. *Proceedings of the Parapsychology Association, 47*, 15-26.

Burgess, T. D., & Sales, S. M. (1971). Attitudinal effects of "mere exposure": A reevaluation. *Journal of Experimental Social Psychology, 7*, 461-472.

Cacioppo, J. T., Petty, R. E., & Kao, C. F. (1984). The efficient assessment of need for cognition. *Journal of Personality Assessment, 48*, 306-307.

Carpenter, J. C. (2012). *First Sight: ESP and parapsychology in everyday life.* Rowman & Littlefield.

Costa, P. T., & McCrae, R. R. (1992). *Revised NEO Personality Inventory and NEO Five-Factor Inventory.* Psychological Assessment Resources.

Dalton, K. (1997). Exploring the links: Creativity and psi in the ganzfeld. *Proceedings of the Parapsychological Association 40,* 119-134.

Hansen, T., & Bartsch, R. A. (2001). The positive correlation between Personal Need for Structure and the mere exposure effect. *Social Behavior and Personality, 29,* 271-276.

Hardaway, R. A. (1990). Subliminally activated symbiotic fantasies: Facts and artifacts. *Psychological Bulletin, 107,* 177-195.

Harrison, R. H., Hartmann, E., & Bevis, J. (2005). The Boundary Questionnaire: Its preliminary reliability and validity. *Imagination, Cognition & Personality, 4,* 355-382.

Hartman, E (1989). Boundaries of dreams, boundaries of dreamers: Thin and thick boundaries as a new personality measure. *Psychiatric Journal of the University of Ottawa, 14,* 557-560.

Holt, N. J. (2006). Research note: Testing for precognitive boredom with a population of visual artists: A pilot study. *Journal of the Society for Psychical Research, 70,* 110-120.

Hunsinger, M., Isbell, L. M., & Clore, G. L. (2012). Sometimes happy people focus on the trees and sad people focus on the forest: Context dependent effects of mood in impression formation. *Personality and Social Psychology Bulletin, 38,* 220-232.

Isbell, L. M., Rovenpor, D. R., & Lair, E. C. (2016). The impact of negative emotions on self-concept abstraction depends on accessible information processing styles. *Emotion, 16,* 1040–1049.

Katz, S. (2001). Bidirectional experimental effects. *Psychological Methods, 6,* 270-281.

Kruglanski, A. W. Freund, T., & Bar-Tal, D.. (1996). Motivational effects in the mere-exposure paradigm. *European Journal of Social Psychology, 26,* 479-499.

Neuberg, S. L., & Newsom, J. T. (1993). Personal need for structure: Individual differences in the desire for simple structure. *Journal of Personality and Social Psychology, 65,* 113-130

Palmer, J. (1978). Extrasensory perception: Research findings. In S. Krippner (Ed.), *Advances in parapsychological research 2* (pp. 59-243). Plenum.

Palmer, J. (1982). ESP research findings: 1976-1978. In S. Krippner (Ed.), *Advances in parapsychological research 3* (pp. 41-82). Plenum.

Palmer, J. (1997). Correlates of ESP magnitude and direction in the PRL and RRC autoganzfeld data bases. *Proceedings of the Parapsychological Association,* (Number 40, pp 283-298).

Petty, R. E., DeMaree, K. G., Brinol, P, Horcavo, J., & Strathman, R. J. (2008). Need for cognition can magnify or attenuate priming effects in social judgment. *Personality and Social Psychology Bulletin, 34,* 900-912.

Qian, M. K., Quinn, P. C., Heyman, G. D., Pascalis, O., Fu, G., & Lee, K. (2017). Perceptual individuation training (but not mere exposure) reduces implicit racial bias in preschool children. *Developmental Psychology, 53,* 845–859. https://doi.org/10.1037/dev0000290

Rao, K. R. (1965). The bidirectionality of psi. *Journal of Parapsychology, 29,* 230-250.

Schlitz, M. J. & Honorton, C. (1992). Ganzfeld ESP performance within an artistically gifted population. *Journal of the American Society for Psychical Research, 86,* 83-98.

Schmeidler, G. S. (1986). Subliminal perception and ESP: Order in diversity? *Journal of the American Society for Psychical Research, 80,* 241-264.

Schmeidler, G.S., & McConnell, R.A. (1958). *ESP and personality patterns.* Yale University.

Silverman, L. H., Lachman, F. M., & Milich, R. H. (1982). *The Search for oneness.* International Universities.

Silverman, L. H., & Weinberger, J. (1985). Mommy and I are one: Implications for psychotherapy. *American Psychologist, 40,* 1296-1308.

Snodgrass, M. (2004). The dissociation paradigm and its discontents: How can unconscious perception or memory be inferred? *Consciousness and Cognition, 13,* 107-116.

Snodgrass, M. (2006). Objective Thresholds are Alive and Well: Response to Erdelyi. *Neuro-Psychoanalysis, 8,* 161-163.

Storm, L. and Tressoldi, P.E. (2017) Gathering in More Sheep and Goats: A Meta-Analysis of Forced-Choise Sheep-Goat ESP Studies, 1994-2015. *Journal of the Society for Psychical Research, 81,* 79-107. https://www.spr.ac.uk/sites/spr.ac.uk/files/p

van Kampen, D, Bierman, D. & Wezelman, R. (1994). Personality and psi: Unravelling relations between extraversion, agreeableness and openness to experience with ganzfeld participants. *Proceedings of the Parapsychological Associaton, 37,* 175-181.

William, C. T. (2003). *Mere Exposure Effects for Affectively Valenced Stimuli.* Dissertation Abstracts International.

Woike, B. A. (2008) A functional framework for the influence of implicit and explicit motives on autobiographical memory. *Personality and Social Psychology Review, 12,* 99-117.

Young, S. G., & Claypool, H. M. (2010). Mere exposure has differential effects on attention allocation to threatening and neutral stimuli. *Journal of Experimental Social Psychology, 46,* 424-427.

Zajonc, R. B. (1968) Attitudinal effects of mere exposure. *Journal of Personality and Social Psychology, 9,* Monograph supplement No. 2, Part 2.

La PES Contribue à la Formation Inconsciente des Préférences

Résumé: La théorie du premier regard (FST) propose que la PES est un processus inconscient continu qui contribue à toutes les expériences communes, telles que les jugements, les perceptions et les sensations. Pour tester ce point, nous avons mené deux expérimentations examinant l'expression implicite d'information percue extra-sensoriellement dans des évaluations de préférence pour des images, modérées par plusieurs variables spécifiquées par la FST. Les études tentent également de démontrer l'influence d'information inconsciente (extrasensorielle ou subliminale) sur l'humeur, et l'influence subséquente de l'humeur sur l'orientation générale d'une personne envers les influences inconscientes, dont le psi. Dans la première étude, les variables includent 3 facettes d'ouverture et 2 facettes d'anxiété du NEO-PI, l'implication dans une activité créative, la croyance dans la possibilité de la PES, la tolérance pour les tâches déstructurées, et une mesure de la tolérance pour les fusions interpersonnelles. L'humeur était mesurée indirectement par la valence de souvenirs autobiographiques précoces. La plupart des variables furent reliées aux infulences PES conformément aux prédictions, et les relations tendaient à être plus fortes lorsque l'humeur était positive. De multiples régressions étaient utilisées pour condenser ces découvertes dans un cluster de variables orthogonales dont on pourrait s'attendre à ce qu'il soit plus fiable. La seconde étude testait cette variable composite dans un nouvel échantillon et la validait significativement. A nouveau, les relations étaient plus fortes lorsque l'humeur était meilleure. Nous avons également prédit que ces relations devraient être plus fortes lorsque l'information est de plus grande pertinence personnelle – des images avec des contenus humains vs non-humains – et cela fut également confirmé. Chaque étude examinait également l'effet de la stimulation subliminale sur les autres essais de préférence (les participants ne pouvaient pas distinguer les essais extrasensoriels et subliminaux) et examinait le pouvoir des variables trouvées dans la recherche précédente pour prédire la réaction subliminale. La première étude a trouvé une validation limitée pour les prédictions subliminales, et la seconde étude n'a trouvé aucune validation pour elles. Les humeurs des participants étaient influencées par les indices subliminaux de fusion dans la première étude, mais elles n'étaient pas influencées par les stimuli extrasensoriels comparables dans la seconde. Les réactions aux images extrasensorielles et subliminales

Der Beitrag von ASW zur Unbewussten Bildung von Präferenzen

Zusammenfassung: Die First Sight Theory (FST) [Theorie zum Ersten Gesicht] geht davon aus, dass ASW ein permanenter unbewusster Prozess ist, der zu allen alltäglichen Erfahrungen, wie Urteilen, Wahrnehmungen und Gefühlen beiträgt. Um dies zu prüfen, führten wir zwei Experimente durch, die den implizite Ausdruck von ASW-Informationen bei Präferenzbewertungen von Bildern untersuchten, moderiert durch mehrere von der FST spezifizierte Variablen. Die Studien versuchten auch, den Einfluss unbewusster Informationen (außersinnlich und unterschwellig) auf die Stimmung und den anschließenden Einfluss der Stimmung auf die allgemeine Orientierung einer Person gegenüber unbewussten Einflüssen, einschließlich Psi, aufzuzeigen. In der ersten Studie umfassten die Variablen 3 Facetten der Offenheit und 2 Facetten der Ängstlichkeit aus dem NEO-PI, die Beschäftigung mit einer kreativen Tätigkeit, der Glaube, dass ASW möglich ist, die Toleranz für unstrukturierte Tätigkeiten sowie ein Maß für die Toleranz gegenüber zwischenmenschlichen Verschmelzungserlebnissen. Die Stimmung wurde indirekt durch die Bedeutung früher autobiographischer Erinnerungen gemessen. Die meisten Variablen standen, wie vorhergesagt, mit dem Einfluss von ASW in Verbindung, und die Zusammenhänge waren tendenziell stärker, wenn die Stimmung positiv war. Mittels multipler Regression wurden diese Befunde zu einem Cluster orthogonaler Variablen verdichtet, von denen erwartet werden konnte, dass sie am reliabelsten sind. Die zweite Studie überprüfte diese zusammengesetzte Variable an einer neuen Stichprobe und validierte sie signifikant. Wieder waren die Zusammenhänge stärker, wenn die Stimmung besser war. Wir sagten auch voraus, dass die Zusammenhänge stärker waren, wenn die Informationen von größerer persönlicher Relevanz waren - Bilder mit Bezug zu Menschen vs. solche ohne diesen Bezug - und auch dies wurde bestätigt. Jede Studie untersuchte auch die Auswirkung der unterschwelligen Stimulation auf andere Präferenzversuche (die Teilnehmer konnten nicht zwischen außersinnlichen und unterschwelligen Versuchen unterscheiden) und untersuchte die Wirkung von Variablen, die in früheren Untersuchungen zur Vorhersage der unterschwelligen Reaktion gefunden wurden. Die erste Studie ergab eine begrenzte Validierung für die subliminalen Vorhersagen, und die zweite Studie fand keine Validierung für sie. Die Stimmungen der Teilnehmer wurden in der ersten Studie durch unterschwellige Hinweise auf eine Verschmelzung beeinflusst, aber sie wurden in der zweiten Studie nicht durch vergleichbare außersinnliche Reize beeinflusst. Die Reaktionen auf außersinnlich präexponierte und unterschwellig präexponierte Bilder waren in beiden Studien nicht miteinander korreliert.

La PES Contribuye a la Formación Inconsciente de Preferencias

Resumen: La Teoría de la Visión Primera, (*First Sight Theory* - FST, por sus siglas en inglés) propone que la percepción extrasensorial (PES) es un proceso inconsciente continuo que contribuye a todas las experiencias comunes, como los juicios, percepciones y sentimientos. Para probar esto, llevamos a cabo dos experimentos para examinar la expresión implícita de la información de la PES en el índice de preferencia de imágenes, moderada por diversas variables especificadas por la FST. Estos estudios también intentan demostrar la influencia de la información inconsciente (extrasensorial y subliminal) sobre el estado de ánimo y, subsecuentemente, la influencia del estado de ánimo sobre la orientación general de una persona hacia las influencias inconscientes, incluyendo los fenómenos psi. En el primer estudio, las variables incluyeron 3 facetas de *Apertura a la Experiencia* y 2 facetas de *Neuroticismo* del

NEO-PI, involucro en actividades creativas, creencia en la posibilidad de la PES, tolerancia a las tareas no estructuradas, y tolerancia ante la unificación interpersonal. El estado de ánimo se midió, implícitamente, mediante la valencia del primer recuerdo autobiográfico. La mayoría de las variables tuvieron una relación con la influencia de la PES como se predijo, y estas relaciones tendieron a ser más Fuertes cuando el estado de ánimo era positivo. Se utilizó la regresión múltiple para sintetizar estos hallazgos en un grupo de variables ortogonales que, cabría esperar, fueran las más confiables. El segundo estudio probó esta variable compuesta en una nueva muestra, y fue validada de manera significativa. Una vez más, las relaciones fueron más fuertes cuando el estado de ánimo era positivo. También predijimos que las relaciones deberían ser más fuertes cuando la información tuviera una relevancia personal mayor – ej. imágenes con contenido humano versus sin contenido humano – y esto también fue confirmado. Cada estudio también comparó el efecto de los ensayos con estimulación subliminal versus los otros ensayos (los participantes no pudieron distinguir entre los ensayos extrasensoriales y los subliminales), y el poder de las variables encontradas en investigaciones previas para predecir una respuesta subliminal. El primer estudio encontró una validación limitada para las predicciones subliminales, y el segundo estudio no encontró ninguna validación para ellas. Los estados de ánimo de los participantes fueron influenciados por señales subliminales de unificación interpersonal en el primer estudio, pero no fueron influenciados por estímulos extrasensoriales en el segundo. No hubo correlaciones significativas en ninguno de los estudios entre las respuestas ante imágenes extrasensorial y subliminalmente reexpuestas.