

CHARACTERISTICS OF SUCCESSFUL FREE-RESPONSE TARGETS:
EXPERIMENTAL FINDINGS AND OBSERVATIONS

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Abstract

This paper reviews experimental findings and observations concerning characteristics of successful free-response targets. Information relevant to the following categories of target characteristics was examined: colour/black and white; complex/simple; novel/familiar; abstract/concrete; dynamic/static; form/idea and meaning; emotion; and theme/content. Very few conclusions could be drawn from the data base, although a tentative finding related dynamic, multi-sensory targets to ESP success. Other suggestive findings were reported for novel and abstract characteristics. The discussion considers possible reasons for the general lack of findings and presents a possible avenue for future research.

ACKNOWLEDGEMENTS: Ms. Caroline Watt and Professor James Crandall contributed substantially to the research for this paper, for which I am most grateful. My thanks also to Dr. Julie Milton and Ms. Watt for helpful comments on the paper's content and again to Ms. Watt for the typing of the references.

This and the following paper, presented by Caroline Watt, represents the findings of a literature review examining what makes a successful (in terms of being accurately perceived by the percipient) and/or unsuccessful free-response GESP target. The review was undertaken to assist the Koestler Lab in constructing a free-response target pool for use in our future research. We thought such a review was necessary as initial discussions as to what type of targets we should be looking for revealed that various researchers in our group held differing opinions/ideas as to what qualities a successful target should have. These differences were further reinforced when we started discussing various targets which we had used in our own independent research, and those of other researchers with whose targets pools we were familiar. An initial search through some of the major parapsychology journals and source books revealed very little coherently arranged information regarding free-response targets. This review was undertaken in an attempt to remedy this situation. To this end, we examined relevant parapsychological and psychological experimental findings and theoretical models, post hoc observations, and lab lore in hopes of discovering some consensus regarding psi-conducive target qualities and materials. This first paper will present the findings from parapsychological experimental findings, including post hoc findings and anecdotal observations.

It should be stressed that this review is not meant to be exhaustive. We have tried to scout out related information in the main journals and newsletters (Journal of the American Society for Psychical Research, Journal of Parapsychology, Journal and Proceedings of the Society for Psychical Research, European Journal of Parapsychology, International Journal of Parapsychology, Parapsychology Review, and Research Letter). We have also examined various conference proceedings (Parapsychological Association and Parapsychology Foundation), major parapsychological source books, some of the popular literature regarding the development of psychic abilities, some of the related psychology literature, and other prominent books in our field which we thought likely to contain the information we were seeking. However, it was obviously impossible to examine all of the possibly related literature. Our survey of the historical literature was necessarily quite limited (in fact we examined only two main sources, Warcollier's writings and Phantasms of the Living, 1886).

Target-related information from forced choice studies has not been systematically considered here, the primary reason for this omission being the two reviews of this literature already conducted by Palmer (1978) and Carpenter (1977). However, general findings from these sources occasionally will be referred to where appropriate in this review.

The most frequent comments regarding targets found in these sources were generalizations regarding the choice of target material. For example comments might be made that targets were chosen which were vividly coloured, intrinsically interesting, pleasant, and so on. While such comments may be viewed as conveying the experimenters' perspective of what constitutes an easy-to-perceive target, to list all such comments would have been a very tedious task for both the author and her audience. Furthermore, no comment could be made upon the utility of whatever parameters were adopted when choosing targets unless one were to attempt a meta-analysis of the relevant studies, a project which was far beyond the scope of the present undertaking. Thus, such comments were not included in this review unless information was provided which related particular target characteristics to the success or failure of the study, and/or the

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target materials were specifically chosen to be used in some respect, with the author describing the reason for such selection.

The initial task in this undertaking required finding some way to organize the target information in a meaningful and useful manner. This proved to be quite problematic, as target materials and content are seldom one-dimensional. Thus it was required to find a means of categorizing a diverse range of target materials, such as film clips, actual geographical sites, agents' experience of some sensory stimulus, and a large range of assorted pictorial material, each representing varying degrees of denotative and connotative complexity. Indeed, even defining the target in many studies was not a straight-forward proposition. For example, in telepathic designs, is the target the agent's experience of the target material or the target material itself?

In approaching this task it was thought that the target information could perhaps be divided according to the type of target material used (e.g. art prints, film clips, geographical locations, etc.). However, this approach was rejected as in many cases there was not enough available information about a specific target material to allow sensible generalizations to be made. Also explored were various ways of trying to represent and categorize the obtained target information in a multi-dimensional manner, taking into account both denotative and connotative meaning. To this end, attempts were made to apply to the data various three-dimensional conceptualizations of the sort obtained from the semantic differential. Thus, we sought to find one scale which would categorize the obtained target information taking into consideration various connotative components such as evaluation (does the information convey something which is good-bad, clean-dirty, sacred-profane, etc.), potency (weak-strong, powerless-powerful, light-heavy, etc.), and activity (fast-slow, active-passive, sharp-dull, etc.). This approach of organizing the data was rejected as there was not enough information about most targets to justify a post hoc fitting of the obtained information into such a model. Thus, in the end the task was necessarily defined by the type of information obtained in the literature search.

Looking through the data obtained, it was decided that the information could best be organized according to the following target characteristics: colour / black and white; complex / simple; novel / familiar; abstract / concrete; dynamic / static; form / idea and meaning; emotion; and theme / content. The "working definitions" of these categories will be delineated in the following appropriate sections of this paper. There were many instances where the same data fitted into several different categorizations. For instance, in Krippner, Ullman, et al. (1972) the target consisted of a randomly chosen word, an art print which portrayed the word, and then a multi-sensory (auditory, gustatory, olfactory, tactile and kinesthetic) environment relating to the word/picture was created for the agent. Such a target could easily be classified as complex, novel, dynamic, emotional, and as having a strong theme. In such situations, the author has attempted to refer to the information in all the relevant categories, but has only provided details of the study in the category where it was first mentioned.

Colour / Black and White

The colour category referred to all target materials which were coloured, as opposed to black and white. A telepathic dream study by Krippner and Zeichner (1974) obtained a significant degree ($p < .002$) of psi-hitting using 74 art prints as the targets. A descriptive analysis of

the art prints was then performed using an adaptation of Gough and Heilbrun's Adjective Check List (ACL) (1962) (see also Gough and Heilbrun, 1967). Each of the art prints using this list. If two judges checked the same adjective for any picture, that adjective was deemed to describe the particular print. This analysis revealed that a higher percentage of hits were associated with targets which had blue in them, where targets containing orange and yellow were associated with more misses (whether results were significant is not reported). Puthoff and Targ (1979), in an anecdotal comment upon their remote viewing studies stated that most hits were associated with various nonanalytic aspects of a target, such as colour. However, in another remote viewing study (Targ, Targ and Lichtarge, 1986) where colour was superimposed over black and white slides of locations, it was found that the viewers were unable to perceive the colour. In commenting upon these results the authors speculated that the lack of colour perception may have been due to the restricted number of colour choices which resulted in making the colour perception a more analytic task than the free-response perception of possible target sites. Much of Warcollier's (1938) work used simple black and white line drawings as targets. However, he observed informally that when colour was in the target, it appeared to be perceived as frequently as was the form of the drawing.

A non-psi study by Braud, Davis, and Opella (1985) examined the frequency of occurrence of different types of imagery in dreaming and ganzfeld states. As this study used no targets, the results could indicate what types of imagery have an a priori probability of being mentioned more often than others. In relation to this category, they found that dreaming and ganzfeld imagery contain a predominance of colour (among other things). These results could be pertinent to the findings discussed in this paper, in that some of these findings could be due to a simple predominance of certain naturally-occurring types of imagery as opposed to reflecting actual transmission of target-related content. It is possible that the higher frequency of colour imagery in general could lead to spurious observations of success with colour targets unless formally examined. This should be borne in mind when considering anecdotal observations.

Many studies have been conducted using black and white targets, most notably those experiments where the target consisted of simple line drawings. However, we found no free-response work which compared the effectiveness of black and white to coloured targets. McMahan and Rhine (1947) conducted a forced-choice study using both coloured and black and white Zener cards. They found a higher average score with the coloured cards than with the black and white, but the difference was not significant.

The findings from this category do not indicate any clear-cut differences between the success-rate of colour and black and white target materials. As both have a long track-record of obtaining significant psi outcomes, research specifically aimed at comparing the two in a free-response setting would be needed before any conclusions regarding the superiority of one over the other could be made.

Complex / Simple

Information included in the "complex" category referred to comments and findings about target materials, most commonly pictorial, which were complex and/or rich in content. Krippner and Zeichner (1974) found a higher percentage of misses with more complex targets (whether the finding was significant was not reported). Stuart (1946b) stated that

reasonably complex target material might mislead subjects. Krippner (1970) expressed concern that complex targets would mislead not the subjects but the judges, as complex targets could make the evaluation procedure overly problematic, with the creative judge finding numerous correspondences between many dream sequences and complex, detailed pictures. On the other hand, significant results have been obtained with very complex target material such as film clips (Psychophysical Research Laboratory, 1985) and the multi-sensory target environment of Krippner, Ullman, et. al. (1972) described in the introduction.

Information classified as "simple" included references to targets composed of clear, unequivocally definable, common objects and symbols. Most frequently these targets were simple line drawings. Both Carington (1940) and Stuart (1946a) recommended the use of simple, as opposed to compound, drawings so as not to confuse the subject. Warcollier (1963) noted that even though his targets were simple, percipients' responses still showed considerable distortion. As above, Krippner and Zeichner (1974) found a higher percentage of hits associated with more simple targets as measured by the number of adjectives used to describe the target (again, whether this finding was significant is not reported).

Several forced choice studies have examined the use of multiple-aspect targets. Generally these targets would be considered to be 'simple' by free-response standards. However, being multi-aspect by definition, they would represent more complex material than many forced-choice targets. Palmer (1978) in reviewing this work concluded that when multiple-aspect targets were used subjects tended "to score at least as high or higher on the total target than on any of its primary attributes. Such results suggest either that such targets are perceived holistically (even if the overt responses are fragmentary) or that a correct guess on one attribute somehow facilitates correct guesses on other attributes." (Palmer, 1978, p.88) In a review of six studies utilizing dual-aspect targets, Kennedy (1980) examined whether complex target information was treated as a gestalt or whether the individual parts of the information appeared to be processed separately. No support for or against either mode of information processing was obtained.

The above findings do not merit any clear conclusions. Before such conclusions could be drawn direct comparison within studies of complex target material is needed.

Novel / Familiar

Information relating to unexpected, unfamiliar, unusual and/or incongruous target material was included in the novel category. Cavanna and Servadio (1964) conducted a pilot study to investigate suitable methodologies for studying the occurrence of ESP during states induced by taking hallucinogenic drugs. Their targets were photographs consisting of very incongruous elements, for example an upside-down foot, balancing an artificial eye between the toes. The results were non-significant, although this outcome could have been due to the difficulties involved in attending to a test situation when under the influence of an hallucinogenic drug. Krippner and Zeichner (1974) obtained a higher percentage (whether or not significant was not reported) of hits when targets were described as imaginative and interesting (qualities which could be construed as novel). Ullman and Krippner (1973) ran a four subject dream study in which the same target was used for half of the testing nights and a different target used for each REM period for the other half. They observed that the the four participants preferred the

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use of different targets for every dream against a single target. The authors thought this indicative of the dreamers' attention being more engaged by novel ESP stimuli. In another of the dream studies (female subjects, eight nights ESP, eight of control, no significant scoring) Ullman and Krippner (1973) commented that the subjects felt that the target material should be as unusual as possible. Roll and Harary (1976) found that "interesting responses" (hits) were obtained when spontaneous, unexpected changes were made in the experiment. Two examples they provided of this involved last minute changes being made to the target material.

Several forced-choice studies have considered the effect of novelty of task and/or target material upon ESP performance. In reviewing these studies Carpenter (1977) concluded that novelty could facilitate psi-hitting for most subjects, but could be counterproductive for star subjects used to a specific routine.

Information classified as "familiar" included references to targets which held varying degrees of recognition for the percipients. Many studies have been conducted using targets of emotional significance to the subject and with which the subject would have been also necessarily familiar. However, as emotional significance was usually deemed the more important aspect of such targets, these studies will be considered under that section.

Irwin (1982) conducted a study examining the influence of subjects' familiarity with the targets. Half of the targets (Maimonides slides) were exposed to the subjects prior to testing, and half were not. This manipulation had no significant effect upon the study's outcome. Warcollier's (1938) research lead him to anecdotally conclude that only elements of a target familiar to both the subject and agent could be successfully transmitted. Targ, Puthoff and May (1979) have commented on the basis of informal observations of their own research that use of either repetitive target sequences and/or use of target pools of which the subject had prior knowledge would inhibit remote viewing success.

The few findings reported in this category do not support the drawing of any firm conclusions. There is some anecdotal support for the utility of using a different target, with which the subject is not familiar, for each testing of that subject. Also, the Krippner and Zeichner (1974) findings offer some support for the use of imaginative and interesting targets.

Abstract / Concrete

Abstract information included references to targets which portrayed a potentially realistic scene or object in either an abstract and/or unrealistic manner (to varying degrees) or in a not readily recognizable fashion. Krippner and Zeichner (1974) found a greater percentage of misses with targets which were described as unrealistic (whether this finding was significant was not reported). Ullman and Krippner (1973) in the series of dream studies with 'Erwin', reported that purely abstract pictures which lacked human figures gave poorer results than targets which contained human figures engaged in activity.

Information included in the concrete category would be references to target material which presented an object or scene in an immediately recognizable, undistorted manner. While a great number of studies have used targets which could be characterized as being concrete, we found no specific reference regarding the utility of this characteristic in the free-response studies.

Although Krippner and Zeichner's (1974) finding and Ullman and

Krippner's (1973) observation suggest that abstract targets may not be conducive to psi-hitting, more research is needed before firm conclusions can be drawn.

Dynamic / Static

The dynamic categorization was used to refer to informations about targets which portrayed and/or conveyed movement, a sense of movement, and/or gustatory, olfactory, auditory, tactile, and/or kinesthetic stimulation. Thus a wide diversity of target materials fell into this category including pictorial material (showing movement), film clips (containing movement), and a variety of non-visual target material such as music excerpts, the taste of a food, etc. In considering this large category perhaps it should first be noted that Braud, Davis, and Opella (1985) in their non-psi, no target study, found a predominance of activity contained in ganzfeld and dreaming imagery. Gurney, Myers and Podmore (1886) reporting on the findings of the Society for Psychical Research's Census of Hallucinations found that in cases of apparent GESP of literal reproductions of the agent's bodily sensation (pain, smell, touch, etc.) were rarely transmitted. They noted from their own experience that while taste was perceived in experimental situations, they received no accounts of such in the spontaneous reports. The spontaneous cases seldom contained reports of touch, and when it was reported it was normally associated with auditory and/or visual impressions. Music and other auditory stimuli were frequently reported. Warcollier (1963) informally observed that moving objects or the ability of the target to suggest movement seemed to be perceived by the subject. Warcollier (1938) also expressed the belief that kinesthetic sensations should be easily transmitted, but admitted to having little data to back this up. Reporting on an Esalen Meeting on Psi Research, Schlitz (1984) reported general agreement among the participants that kinesthetic, auditory and olfactory images were as important, if not more so, as visual images in conveying psi information.

Honorton and Schechter (1987), reporting on the significant ($p = 0.027$, 1-t) outcome of 187 automated testing ganzfeld sessions, found that sessions using dynamic targets (video segments and other "lifelike" material) were independently significant ($p = 0.007$, 1-t), while those using static targets (defined as "still pictures") were at chance. The difference between the two was suggestive, but not significant ($p = 0.079$, 2-t). Likewise, Krippner and Zeichner (1974) found more hits associated with targets having dynamic content (whether this finding was significant was not reported).

Altom and Braud (1976) ran a pilot study aimed at exploring the idea that right-hemisphere brain activity may be conducive to psi. They used four different excerpts of music as targets, which it was thought might encourage right-hemisphere activity. They obtained a significant level of psi scoring ($p = 0.05$). Kesner and Morris (1978) conducted a guided imagery, precognition study using music from records and their album covers as targets. The subjects' imagery was rated by an independent judge who individually rated subjects' visual and auditory imagery. Neither the results from the visual or the auditory ratings were independently significant, however the two combined were ($p < 0.02$), suggesting that the more senses involved in a target, the better.

Several dream studies have been conducted using dynamic target material. Krippner, Honorton, and Ullman (1972) obtained significant results ($p < .001$) using thematically related slides, accompanied by an

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appropriate sound track, using an audio type of target material Krippner, Honorton, et. al. (1972) again elicited a significant level of psi-hitting ($p = .004$). An even higher level of significant scoring ($p = .0002$) was obtained by Krippner, Ullman, et. al. (1972) using the multi-sensory target environment described in the introduction of this paper. As previously mentioned, Ullman and Krippner (1973) found that paintings of humans engaged in activity seemed to be more successful than abstract paintings in the Erwin series. The second Erwin study, which again obtained a significant degree of psi-hitting (reported effects "on the order of a thousand to one" p.116), used art prints together with associated objects and activities on the part of the agent.

Dunne and Bisaha (1979), reviewing seven remote viewing series, noted that dynamic targets were perceived as readily as stationary ones. Yet, Puthoff and Targ (1979) commenting upon their remote viewing work said that motion was very rarely reported, even when it was an important component of the scene. Although, Targ, Puthoff, and May (1979) stated "that real-time activities at the target site are often perceived" (p.94). These authors also noted that "in addition to visually observable detail, subjects sometimes report sounds, smells, electromagnetic fields, and so forth, which can be verified as existing at target locations" (p.95). It should be noted that the above three observations were all anecdotal.

Two studies made specific comparisons between static and dynamic target characteristics. Honorton and Schechter (1987) obtained highly significant psi effects with dynamic targets, while static targets obtained chance results. Krippner and Zeichner (1974) found more hits associated with dynamic targets. The findings of Kesner and Morris (1978) and those of the reviewed dream studies further suggest the possible benefits of using multi-sensory target materials.

Form / Meaning and Idea

Comments related to the importance of the shape or form of the target or some of its components are included in this category. Puthoff and Targ (1979), in discussing their remote viewing work stated "most of the correct information that subjects relate is of a nonanalytic nature pertaining to shape, form, colour, and material rather than to function or name" (p. 65). Barrington (1983), reviewing past work with the medium Stefan Ossowiecki, found many examples where the form of the target had been correctly identified but not the meaning, a situation which she labelled as "incomprehending clairvoyance". Similarly, Warcollier (1938 & 1963) observed that frequently the shape of a target would be perceived without reference to the target's meaning or idea, although he also notes that meaning and idea may also be perceived without specific reference to shape. Warcollier (1938) also discusses the work of Richonnet (no reference provided) noting that Richonnet thought that form was both easier to perceive than meaning and would be perceived prior to perception of the identity (idea) of the ESP target.

The "meaning and idea" categorization includes information referring to situations where the meaning, idea and or identity were perceived, without reference to the shape or physical appearance of the target. Carington (1940) believed that the idea of a target, not the form, was what would come through to the subject. Gurney, Myers and Podmore (1886) received reports which indicated that meaning and idea were the important aspects of the target. The example they provide of this is where a word in one language is received in another, having been suitably translated. Marsh (1960), in a study using simple line drawings as targets, commented that subjects tended to reproduce the concept of the target

rather than the shape. Lodge apparently shared these beliefs as, according to Warcollier (1938), he believed that an idea is more easily transmitted than a drawing (i.e. form). As noted above, Puthoff and Targ (1979) believed that most correct information provided by subjects pertained to the nonanalytic aspects of targets such as form, shape and colour. Indeed, they thought that errors could arise when the subject tried to make sense (i.e. label according to name and function) of such nonanalytical target components.

This category presents some conflicting observations and opinions, all of which are anecdotal in nature, regarding the utility of form, as opposed to meaning and idea, in conveying psi-related information. Given this state of affairs, the only conclusion that can be drawn is that research aimed at resolving this question is needed.

Emotion

Any comments having to do with the emotional content of or emotional reactions to target materials were included in this category. Some researchers have also made comments about specific target themes/content which could be interpreted as having a strong emotional component (e.g. war scenes, erotic scenes, religious themes, etc.). However, whether these themes would be regarded as positive or negative would probably vary greatly from subject to subject. Therefore, these findings will not be referred to in this section unless the author specifies that the emotionality of the target was an important factor in the study's success or failure.

Gurney, Myers, and Podmore (1886) observed that in spontaneous cases emotions were frequently received, often with the receiver having no idea why they were experiencing certain feelings. However, the emotion experienced by the percipient was later found to be appropriate to the event which was taking place at the time, unknown to the percipient (e.g. feeling sadness over the death of a close friend). Warcollier (1938) also comments that in spontaneous cases, the message is almost always emotional.

Williams and Duke (1979) conducted a study specifically examining various target qualities and their relationship to psi performance. They devised a 39-item Target Evaluation Rating which measured various target qualities, including overall emotional impact and positive and negative emotional dimensions, upon which each of 152 targets were rated. They then looked at data, gathered from 174 subjects, from other free-response studies which had used these targets. For the purposes of their analysis, they excluded any target which had not been randomly chosen as a target at least three times in the previous studies. This criterion provided 22 targets, and ESP data from 91 subjects (overall significant psi-hitting was obtained, $p < .047$, 2-t). The individual psi scores obtained for each of these 22 targets were averaged to provide a composite psi score for each target. The composite psi scores were divided into good psi targets and poor psi targets resulting in 12 high psi-scoring targets and 10 low-psi scoring targets. Comparing these targets to the total emotion score (the mean of the positive and negative emotion ratings) from the Target Evaluation Rating, they found that targets containing a stronger emotional content were significantly better (i.e. high psi-scoring targets) than non-emotional targets ($p < .001$).

Sondow, Braud and Barker (1981) conducted a ganzfeld study also aimed at investigating target qualities, which obtained a significant outcome using a sum of ranks ($p < .04$ 1-t), but did not reach significance using direct hits as a measurement. Using the Target Evaluation Rating,

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described for release 2000/08/15 : CIA-RDP96-00792R000701020006-2 five having a relatively high emotion rating and five having a low emotion rating. Each high emotion pack consisted of two positive and two negative emotion pictures; the low emotion packs consisted of two natural scenes and two pictures of material objects. This complex study involved many different measurements and analyses, of which only those most relevant to this paper will be reported. The neutral (low) emotion target packs showed more psi-hitting than the high emotion pictures, with the difference approaching significance ($p = .052$, 2-t). Using a scale they devised to measure emotion which both the subjects and agents completed, they found that when a high emotion picture was the target, receivers would feel more total emotion whilst in the ganzfeld than did receivers with a low emotion target pack ($p < .04$, 2-t). Also receivers felt more emotion when senders felt more emotion while sending ($p < .04$, 1-t). However, Stanford (1984) has pointed out that this latter finding could be artifactual due to commonalities of experience between subjects and agents (e.g. the weather that day). Using Osgood's Semantic Differential to measure the components of the target pictures, they found there more hits when the receivers' and senders' evaluation of the targets were in close agreement than when their categorizations widely differed. Of twenty targets where agreement was close, nine were direct hits ($p = .04$, 1-t).

Both Williams and Duke (1979) and Sondow, Braud and Barker (1981) found significant outcomes in various analyses examining how well their subjects liked (emotionally preferred) the target. Williams and Duke (1979), comparing subjects' ratings of target preference for hit and missed targets for two different groups of subjects (with the rating being made prior to obtaining feedback as to the target identity), found the first group of 101 subjects significantly preferred targets with which they had obtained a hit ($p < .035$, 2-t), as did the second group of 80 subjects ($p < .0038$, 2-t). A similar finding was reported in the Sondow et al. (1981) study, where a comparison between liking for psi-hit and for psi-missed targets again yielded a significant outcome ($p < .0096$, 2-t). Another analysis in this study showed that pictures received a significantly higher liking rank ($p < .0094$, 2-t) when they were the target than when they were a control. Braud and Loewenstern (1982) also found that psi-hitters liked their targets significantly better than psi-missers ($p < .025$, 1-t). Two other significant target preference findings were presented in Braud and Boston (1986). The authors replicated the preference effect ($p < .036$, 1-t), and also reported similar results from Braud, Ackles & Kyles ($p < .045$, 1-t). However, these findings may be contaminated due to response bias problems. To quote Stanford (1984) "these findings could be artifactual;... Because of their desire for success, subjects may tend to like pictures which correspond to their ganzfeld mentation, and such correspondence tends to be greater and more detailed when ESP has actually occurred. Thus such pictures may be liked appreciably more." (p. 107). Many forced-choice studies have examined the role of target preference. These findings have been reviewed by Carpenter (1977) and Palmer (1978). In drawing some conclusions about these findings Palmer comments that while a preferential effect has been found most often "with respect to response type rather than target type, it (the preference hypothesis) offers our best hope to date of intergrating a very messy and inconsistent body of data concerning the effect of target type on ESP scoring in forced-choice experiments." (p. 87).

Krippner, Honorton, et al. (1972) considered their targets

(thematically related slides and appropriate sound tracks) to be emotionally arousing, and thought that their significant results provided support for the use of such material. Ullman and Krippner (1973) also felt "that an important ingredient in the success of experiments in dream telepathy over waking telepathy ... is the use of potent, vivid, emotionally impressive human interest pictures to which both agent and subject can relate." (p. 210).

Moss (1968; also see: Moss, 1969; and Moss & Gengerelli, 1968) described the evolution of her experimental methodology over a series of six experiments. Emphasizing the importance of using emotionally arousing targets, her targets evolved to consist of slides accompanied by appropriate sound effects paired so as to present contrasting emotions. The results from these studies were very sketchily presented, although significant outcomes were described for some of the studies. However, no comparison was made between either emotionally arousing targets and neutral ones, or between the effectiveness of the different contrasting emotions. In a series of studies Preiser (1986) found that ESP performance was highly dependent on the emotional loading of the target material. The information about this study is limited as it was obtained from an abstract. However, while no overall significance was obtained, one part of the series did get a significant ESP outcome. Cavanna and Servadio (1964) stressed the careful choosing of targets which they considered to have definite emotional significance. While they did not obtain significant psi-scoring, they did express the belief that their future targets should be chosen to be even stronger, emotionally.

Some studies utilizing physiological measurements have used targets chosen to have specific emotional significance for individual subjects. Esser, Etter, and Chamberlain (1967) used plethysmographic responses to personalized target material, devised from initial interviews with the participants. The resulting targets, designed to have greater emotional significance for either the percipient or the agent, were either names of importance to the subject or sentences or quotes describing a emotional conflict of relevance to the participants. No significant outcomes were obtained, but the results were suggestive in that there was some correspondence between onset of the sending period and plethysmograph responses. Dean (1971) contrasted plethysmograph recordings of vasoconstriction examining the reaction of subjects to targets consisting of either a blank card or a card upon which was written a name of a person who has emotional significance to the subject. He found larger vasoconstrictions (i.e. more emotional arousal) for the names than for the blanks. This study also had a group of control subjects for whom the names would have had no special relevance. Interestingly, he found that the control subjects displayed a greater level of reaction to the names than did the subjects for whom the names had emotional significance. Haraldsson (1983) again used names of emotional significance to the participants as the target in a study using a plethysmograph. No overall significant results were obtained, however, he did obtain a significant outcome in the first 20 sessions of the study ($p < .003$), with results declining later.

Several studies have compared targets having positive emotional qualities to those having negative emotional characteristics. Williams and Duke (1979), comparing good psi targets to poor psi targets, found that targets which contained a positive emotion were significantly better targets ($p < .02$) than those which did not and that targets which contained negative emotion were significantly worse ($p < .047$) than those which did not. Sondow, Braud and Barker (1981) found no significant

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Eisenberg and Donderi (1979) used 7 emotionally stimulating sound films as targets in a study incorporating both forced-choice and free-response conditions. They obtained a significant degree of psi-hitting (forced-choice condition: $p < .02$; free-response condition: $p < .001$). The film clips were classified as conveying either positive or negative emotions, although no significant difference was found between the scoring on the positive and negative emotional targets. Krippner and Zeichner (1974) found more misses when the target was described as pleasant and more hits when the target was described as unpleasant (whether these findings were significant is not reported).

One forced-choice study which specifically addresses the positive/negative issue was conducted by Johnson (1971) who asked subjects to provide two words, one having an exceedingly pleasant meaning for the subject and the other having a very unpleasant meaning, from which he created targets of associated words/concepts. These concepts (secondary targets) were paired with a digit from one to five (primary targets), although 20 per cent of the primary targets were left unpaired as a control (emotionally neutral targets). The subjects in this precognitive study were to guess what number would be selected as the target. Johnson compared performance on positive, neutral and negative emotions. No significant overall scoring was obtained, the positive targets showed a non-significant degree of psi-hitting, the negative targets significantly psi-missed ($p = .0094$, 1-t), and the neutral targets scored at chance. The difference between the positive and negative targets was significant ($p < .005$, 1-t).

The anecdotal observations in this category reveal that many researchers believe emotional targets to be superior to non-emotional ones. However, only two studies (Williams & Duke, 1979; and Sondow et al., 1981) explicitly examined this assumption and they obtained conflicting results. One analysis in Sondow et al. (1981) found that the percipient would experience more emotion with a high emotion target, but as this study also obtained a greater degree of psi-hitting with low emotion targets, this result could be seen as arguing against the use of high emotion targets. Nor can the physiological studies be readily interpreted as providing support for the utility of using target material chosen to have specific emotional significance for individual subjects. Aside from the general lack of significant outcomes of these studies, the Dean (1971) study actually obtained a greater response from his control subjects to whom the target material should have had no special relevance. The studies comparing positive emotional targets to those with negative emotive qualities also obtained conflicting results. Thus, again more research is needed before any conclusions can be drawn regarding the psi-conductive effects of emotional targets.

Theme / Content

This category includes all references which associate the specific content or theme of individual targets with the success/failure of these targets. Williams and Duke (1979) found that "most of the psi-hitting targets were natural, while the missing targets were material objects--metal, concrete, man-made, and mechanical." (p. 8) A post hoc analysis revealed this difference to be significant ($p < .02$). Dunne, Jahn, and Nelson (1983), reporting on several remote viewing studies, noted that there was no difference in effectiveness between the following site characteristics: natural vs. man-made; permanent vs. transient; and indoor vs. outdoor. The Psychophysical Research Laboratory (1985)

compared various categories of target content to see if some were more successful than others. The category of "disasters" obtained significant psi-hitting ($p = .014$, 2-t). Sexual themes were associated with significant psi-missing ($p = .008$, 2-t). Non-significant scoring in the psi-hitting direction was obtained by (listed in descending order of strength of effect) the categories of religion, sports/hunting, locales, and animals. Non-significant scoring in the psi-missing direction was obtained by the racing and fighting/warfare categories. A post hoc analysis by Sondow (1979) found that targets were chosen and non-targets avoided significantly often when the pictures showed horses ($p < .01$), water ($p < .02$), fire ($p < .03$), and flying-leaping-swinging ($p < .04$). Such effects were not found with the target categories of food, war and famine, and music. Ullman and Krippner (1973) observed that the art prints containing/portraying religion, colour, eating/drinking, emotions, and people tended to be successful, as did the agent's multi-sensory involvement with the target. Stuart (1945), using simple line drawings as targets found that the two most successful targets portrayed a cartoon character and a candle. The two least successful targets were a book and a mathematical equation. In another drawing study, Stuart (1947) found the best target was a church and the worst was a train. Lastly, Braud, Davis, and Opella (1985) found a predominance of human characters and architectural content contained in ganzfeld and dreaming imagery. Less frequent were mythical characters, animals, food, and unconnected body parts. These findings could contribute to spurious anecdotal observations.

Examining these diverse content categories it was discovered that religion was mentioned three times as a generally successful target topic. Warfare was twice mentioned as being less successful. Williams and Duke (1979) found that natural targets were associated with psi-hitting, and the categories specified as successful by Sondow (1979) could also be classified as natural. However, given the wide diversity of actual targets which these findings represent, these similarities should be viewed at most as possible trends which require further research for confirmation.

Discussion

The most consistent category findings of this paper relate to the possible advantages of using dynamic, multi-sensory targets. However, these findings are based on the outcome of relatively few studies and thus should be treated with caution pending further confirmation. The novel category provided some tentative support for the use of new targets with which the subject is not familiar for each trial with that subject, and also suggested possible benefits of using imaginative and interesting targets. But again these findings are derived from very few studies. The two findings relevant to the abstract categorization both found abstract targets to be associated with poorer results. The emotionality of targets, often quoted in the literature as one of the yardsticks by which targets are chosen, has not been shown to be reliably associated with psi-hitting. Nor have any of the other categories investigated herein.

In short, this review has not succeeded in shedding a great deal of light upon what qualities/characteristics might discriminate successful from unsuccessful free-response targets. Indeed, the outcome of this paper could be viewed as demonstrating how very little we actually know about successful versus unsuccessful target characteristics.

However, another interpretation of these findings could be that

target characteristics can not be consistently related to successful outcomes, due to individual differences. Many years ago Warcollier (1963) commented that "No two subjects respond alike to the same target. No two targets seem to affect the same subject in the same way." (p. 56). Indeed, a great deal of experimentation has examined and revealed interactions between various trait factors and psi performance (for reviews of this literature see Palmer, 1978; or Carpenter, 1977). Other variables such as state, setting, response method, and so on, may also influence the particular type of target which is successful in any given situation. Future research could profitably examine the effects of such variables. In addition, the development of a descriptive set of scales, such as the three-dimensional scale discussed in the introduction of this paper, which could be used on an inter-laboratory basis, could forward our knowledge of target success considerably. The development of such scales will be the focus of future research at the Edinburgh Lab.

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