

# CREATIVITY, SUBJECTIVE PARANORMAL EXPERIENCES AND ALTERED STATES OF CONSCIOUSNESS

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## INTRODUCTION

Between 1962 and 2003, 27 experimental studies have explored the relationship between creativity and psi. These suggest there is something about artistic populations that is psi-conductive. Of ten free-response studies working with artistic populations, four found that compared to non-artists, artists obtained a significantly higher hit rate (e.g., Moss, 1969). The remaining six studies used the ganzfeld paradigm, each obtaining above chance psi-scoring, with hit rates between 30% and 50% (MCE=25%), and an overall hit rate of 40% (e.g., Morris, Summers & Yin, 2003). These artistic populations obtained higher hit rates than the general populations of ganzfeld studies – for which a recent meta-analysis estimates a hit rate of 30% (Bem, Palmer & Broughton, 2001). However, the interpretation that this psi-success is due to the creativeness of the participants is questionable – it is confounded by other potential characteristics of these populations, such as extraversion, self-confidence, open-belief systems or a willingness to introspect, and the ‘experimenter effect’.

Artistic involvement alone is not a measure of creativity. Creativity is commonly defined as a process whereby a novel product emerges, something that is original and also valuable or adaptive (e.g., Boden, 1996). Research using psychometric measures of creativity as correlates of psi-success (e.g. divergent thinking) have had mixed success (there are more significant outcomes with non-artistic populations) and contradictory outcomes (suggesting that ‘creativity’ may be associated with magnitude of psi) (e.g. Roe, Anowarun & Mckenzie, 2001). Creativity is a poly-faceted, heterogenous construct, with low convergent validity between its various measures (Hocevar, 1981). Interpretation of its relationship to psi has been further hindered by this complexity, particularly when different measures of ‘creativity’ have been used in isolation, as Palmer (1978) noted.

This study sought to clarify the relationship between creativity and psi by asking if different dimensions of creativity relate differentially to the likelihood of having subjective paranormal experiences (SPEs) and to a proclivity to experience altered states of consciousness (ASCs). This expanded upon the work of Kennedy, Kanthamani and Palmer (1994) who found incidence of SPEs to be significantly correlated with rating artistic creativity as an important purpose in life ( $r=.20$ ,  $p=.04$ ).

## METHOD

### *Design*

A correlational design was adopted, and a principal components analysis (PCA) conducted to identify underlying dimensions of creativity and determine their relationship to ASCs and SPEs. The order of measures presented to participants was counterbalanced. There were two versions, in reversed orders, with the ‘drawing task’ in the middle to act as a break from questionnaires.

### *Apparatus and Materials*

*The Emotional Creativity Inventory*, Averill (1999). A 30-item inventory examining three facets of emotional experience: preparedness; novelty; authenticity and effectiveness.

*Creativity Checklist*, (Griffin & McDermott, 1998). A 54-item checklist, assessing involvement in: visual arts, performance arts, writing, music and domestic crafts. A scientific activities subscale was added, based on the Creative Behavior Inventory (Hocevar, 1979).

*Self-perceived creativity and the importance of creativity*. A 2-item measure on a 7 point Likert scale, asking: “How creative would you describe yourself to be?”; and “Is involvement in a creative practice an importance purpose in your life?”.

*Gough’s Creative Personality Scale*, CPS (1979). A sub-scale of the Adjective Checklist (Gough & Heilbrun, 1983) composed of 12 adjectives antithetical to, and 18 associated positively with, ‘creative personality’.

*Remoteness of Associations*. Based on the model that making remote word associations is related to creativity (e.g. Martindale, 1989; Mednick, 1969), quick responses are made to ten stimulus words by writing an associated, but unusual, response.

*Shapes*, a drawing task, where nine simple abstract lines are turned into ‘objects’, based on the divergent thinking model of creativity developed by Guilford (e.g., 1967) and Torrance (e.g., 2000). Responses are scored by: *flexibility*, the total number of different ideas produced: and *originality*, the unusualness of ideas.

*The Creative Cognition Inventory*, CCI (Holt, 2002). A 29-item scale developed to assess the use of different cognitive styles in the creative process, with seven sub-scales: heightened internal awareness; intuition; linear, goal-directed cognition; playful, absorbed cognition; the use of analogy; and oneiric cognition.

*The Assessment Schedule for Altered States of Consciousness*, ASASC (van Quekelberghe, Altstotter-Gleich, & Hertwick, 1991), consisting of 97 items and eleven sub-scales (delineated in the first column of *Table 1*), including SPEs (extrasensory perception and direct mental influence on living systems).

*Barron’s Ego-strength Scale*, (1968), updated MMPI-2 version (Schuldberg, 1992). A 45-item scale measuring personality integration, self-adequacy and personal adaptiveness and effectiveness.

### Participants

211 participants (108 females and 101 males), aged between 18 and 70+ were recruited through opportunity sampling (the UCN psychology participant pool, UCN staff, SPR members and posters/flyers at conferences, art galleries and libraries) and word of mouth (through contacts with creative groups and academics at other universities). Participants included 36 professional artists (e.g. fine artists, poets, composers, film makers) and 28 professional scientists (physicists, chemists and engineers).

### Procedure

When an enquiry was made, potential participants were given by hand, emailed or posted a questionnaire with an introductory letter and instructions about the study. Hence participants could select their preferred environment to complete the questionnaire. This could be returned either via a freepost address or by email, for which participants were given an eight-week time scale. Participants were asked to spend only five minutes on ‘Shapes’ and to complete the word association task as quickly as possible.

## RESULTS AND DISCUSSION

From the PCA seven oblique components of creativity emerged, as delineated in the top row of *Table 1*. SPEs correlated most highly with the component labelled ‘intrapersonal awareness’ ( $r=.45$ ,  $p=.000001$ ). This component loaded predominantly on emotional creativity and the sub-scales of the CCI that focused on heightened internal awareness (e.g. paying attention to visual imagery and emotions) and non-linear cognition, and was positively correlated with artistic writing and the visual arts. Involvement in ‘music and performance arts’ and ‘crafts and visual art’ correlated at low levels with SPEs, but were not significant when corrected for multiple analysis ( $r=.19$ ,  $p=.007$  and  $r=.15$ ,  $p=.03$  respectively).

Table 1: Partial correlations between creativity components and ASCs controlling for ego-strength, gender and age\*

	Intrapersonal awareness	Artistic creative persona	Figural divergent thinking	Scientific creative personality	Music and performance arts	Crafts and visual art	Writing
Extraordinary mental processes	<i>.51</i> <i>.000001</i>	.18 .01	.08 .28	.02 .80	.14 .05	.09 .24	-.05 .53
Parapsychological experiences	<i>.45</i> <i>.000001</i>	.10 .18	.08 .26	.05 .45	.19 .007	.15 .03	-.02 .80
Esoterics	<i>.42</i> <i>.000001</i>	.10 .15	.09 .23	.03 .63	.13 .07	.04 .55	-.02 .81
Positive mystical experiences	<i>.54</i> <i>.000001</i>	<i>.37</i> <i>.000001</i>	.20 .005	.20 .005	.10 .15	.11 .13	.08 .26
Negative mystical experiences	<i>.30</i> <i>.00001</i>	.11 .13	.11 .13	.02 .79	.02 .75	-.08 .28	.08 .28
Imagination	<i>.55</i> <i>.000001</i>	<i>.42</i> <i>.000001</i>	.20 .005	.13 .06	.17 .02	.22 .002	-.03 .66
Dreams	<i>.55</i> <i>.000001</i>	<i>.28</i> <i>.0001</i>	<i>.25</i> <i>.0001</i>	.12 .09	.19 .009	.21 .003	.08 .25
Dissociation	<i>.54</i> <i>.000001</i>	.22 .002	.17 .02	.21 .003	.10 .16	.18 .01	-.11 .12
Hallucinations	<i>.52</i> <i>.000001</i>	<i>.27</i> <i>.0001</i>	.11 .12	.08 .28	.12 .09	.09 .20	.10 .18
Hypersensitivity	<i>.43</i> <i>.000001</i>	.19 .01	.08 .24	.03 .63	.23 .002	.04 .56	.07 .31
Changed feelings of time and space	<i>.45</i> <i>.000001</i>	<i>.25</i> <i>.0001</i>	.14 .04	.20 .005	.20 .005	.08 .27	.05 .46
Total score on the ASASC	<i>.67</i> <i>.000001</i>	<i>.33</i> <i>.00001</i>	.21 .003	.15 .04	.19 .008	.13 .07	.05 .47

\* Correlations in italics are significant at the  $p < .05$  level; those in bold remain significant when corrected for multiple analysis with the Bonferroni method ( $p < .0006$ ).

Participants who practiced a 'mental discipline' (e.g., meditation, prayer, yoga, martial arts) scored significantly higher than those who did not on the intrapersonal awareness dimension of creativity only ( $z = -5.23$ ,  $p = .0000002$ ). Professional artists scored significantly higher on intrapersonal awareness than both scientists ( $z = -4.03$ ,  $p = .00006$ ) and other professions ( $z = -4.35$ ,  $p = .00001$ ).

This analysis suggests that of these dimensions of creativity, it is not cognitive flexibility (divergent thinking), creative personality or involvement in particular domains that relate to the reporting of SPEs in this sample, but an openness to and exploration of 'psychological space'. This concurs with the idea that people who have 'internal sensitivity' are more likely to have psi experiences (Honorton, 1972). Although artistic populations may be more likely to possess such a 'cognitive style', mere involvement in artistic domains alone does not appear to be related to SPEs to a significant degree. However, other dimensions of creativity correlate at higher levels with ASC proclivity, hence these may mediate psi-outcome in studies that seek to manipulate states of consciousness as part of a 'psi-conductive' protocol. The next stage of this research will be to explore how well these components of creativity predict psi-success in an experimental paradigm.

REFERENCES

- Averill, J. (1999). Individual differences in emotional creativity: Structure and correlates. *Journal of Personality*, 67, 331-371.
- Barron, F. (1968). *Creativity and personal freedom*. Princeton & London: D. Van Nostrand Company.
- Bem, D., Palmer, J. & Broughton, R. (2001). Updating the ganzfeld database: A victim of its own success? *Journal of Parapsychology*, 65, 207-18.
- Boden, M. (Ed.). (1996). *Dimensions of creativity*. London: The MIT Press.
- Gough, H. (1979). A creative personality scale for the adjective checklist. *Journal of Personality and Social Psychology*, 37, 1398-1405.
- Gough, H., & Heilbrun, A. (1983). *The adjective checklist manual (1983 edition)*. Palo Alto, CA: Consulting Psychologists Press.
- Griffin, M., & McDermott, D. (1998). Exploring a tripartite relationship between rebelliousness, openness to experience and creativity. *Social Behavior and Personality*, 26, 347-356.
- Guildford, J. (1967). *The nature of human intelligence*. New York: McGraw-Hill.
- Hocevar, D. (1981). Measurement of creativity: Review and critique. *Journal of Personality Assessment*, 45, 450-464.
- Honorton, C. (1972). Reported frequency of dream recall and ESP. *Journal of the American Society of Psychical Research*, 66, 369-374.
- Kennedy, J., Kanthamani, H. & Palmer, J. (1994). Psychic and spiritual experiences, health and well-being, and meaning in life. *Journal of Parapsychology*, 58, 353-383.
- Martindale, C. (1989). Personality, situation, and creativity. In J. Glover, R. Ronning, & C. Reynolds (Eds.), *Handbook of Creativity*, (p. 211-232). New York and London: Plenum Press.
- Mednick, S. (1962). The Associative Basis of the Creative Process. *Psychological Review*, 69, 220-232.
- Morris, R., Summers, J. & Yim, S. (2003). Evidence of anomalous information transfer with a creative population. *Proceedings of the Parapsychological Association 46<sup>th</sup> Annual Convention*, 116-131.
- Moss, T. (1969). ESP effects in "artists" contrasted with "non-artists". *Journal of Parapsychology*, 33, 57-69.
- Palmer, J. (1978). Extrasensory perception: Research findings. In S. Krippner (Ed.), *Advances in Parapsychological Research*. London: Plenum Press.
- Roe, C., Anowarun, A. & McKenzie, E. (2001). Sender and receiver creativity scores as predictors of performance at a ganzfeld ESP task. *Journal of the Society for Psychical Research*, 65, 107-121.
- Schuldberg, D. (1992). Ego-strength revised - A comparison of the MMPI-2 and MMPI-1 versions of the Barron Ego Strength Scale. *Journal of Clinical Psychology*, 48, 500-505.
- Torrance, E. (2000). Research review for the Torrance tests of creative thinking figural forms A and B. Bensenville, IL: Scholastic Testing Service, Inc.
- Van Quekelberghe, R., Altstotter-Gleich, C. & Hertwick, E. (1991). Assessment schedule for altered states of consciousness: A brief report. *Journal of Parapsychology*, 55, 377-390.

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