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The effectiveness of altering value structure to enhance creativity

Christa LaRai Taylor

THE EFFECTIVENESS OF ALTERING VALUE STRUCTURE TO ENHANCE CREATIVITY

A Thesis

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ABSTRACT

Recent research suggests that the value hierarchies of creative individuals differ systematically from their less creative counterparts. The current study was designed to determine if values related to creativity may be enhanced using an established method of value change, known as Value Self Confrontation (VSC), and if an increase in "creative dimension" values would therefore result in enhanced creative behavior. Participants (N = 163) were randomly assigned to either a control or VSC group, during which they completed a series of surveys to assess their value structure, creative motivation, and creative performance. Participants in the experimental group were exposed to VSC. Two to seven days later participants returned to complete the measures a second time. Data was analyzed using a series of ANOVA and regression tests. The study obtained mixed results. Although the value structures were found to be meaningfully related to creativity, the value self confrontation method was not found to be effective in enhancing creative values or performance. Implications and directions for future research are discussed.

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CHAPTER ONE

INTRODUCTION

Background

In a speech delivered at the 2006 TED conference, Sir Ken Robinson stated that "creativity is as important as literacy" (Robinson, 2006, "Ken Robinson Says Schools Kill Creativity"). Although Robinson was addressing the role of creativity in education, this claim, that creativity is as important as something so fundamental as literacy, may hold true for every aspect of life. In an ever-evolving culture, such as ours, creativity must be acknowledged as essential for leading a fulfilling life (Csikszentmihalyi, 1996). Evidence for the varied benefits of creativity is abundant.

Creativity, defined as "the interaction between aptitude, process, and environment by which an individual or group produces a perceptible product that is both novel and useful as defined within a social context" (Plucker, Beghetto, & Dow, 2004, p. 90), has been shown to be beneficial to individuals, as well as society as a whole. At the individual level, creative expression has been shown to aid in successful aging (Fisher & Specht, 1999), improve

workplace leadership (Tierney, Farmer, & Graen, 1999), aid in academic success (Sternberg, 2003), and improve physical and mental health (Lepore, 1997; Pennebaker, Colder, & Sharp, 1990; Richards, Beal, Seagal, & Pennebaker, 2000), Indeed, Richards (2007) suggests that creativity is essential to individual survival. Without the flexibility and innovation inherent in creative problem solving humans would be unable to adapt to a changing environment. Creativity improves interpersonal relationships by reducing violence (Jurcova, 1998) and helping to maintain loving romantic relationships (Livingston, 1999). Creativity is important for cultural evolution (Csikszentmihalyi, 1996) and economic growth (Florida, 2003). Florida (2003) further suggests that economic development is spurred by creative individuals. He has found that cities which contain higher amounts of the creative class, individuals who work to "create meaningful new forms" (p. 8), boast the most economic growth.

Statement of the Problem

Although, the importance of creativity has been widely recognized by scholars, many feel that creativity remains

undervalued (Kasof, Chen, Himsel, & Greenberger, 2007; Kwang, Ang, Ooi, Shin, Oei, & Leng, 2005).

The results of past surveys administered in the United States illustrate the general public's disregard of creativity and traits related to creativity. In a nationwide survey of personal values, administered in 1968 and 1971, creativity was ranked last out of 18 values both years (Rokeach & Ball-Rokeach, 1989), with the top ranking values being honesty, ambition, and being responsible. More recently, in the 1990-1993 World Values Survey, adults from over 40 societies worldwide rated imagination as the least important quality out of 11 to encourage in children. Less than 30% of respondents from the United States identified imagination as an important quality to encourage in children (Inglehart, Basanez, & Moreno, 1998). Society's attitude regarding creativity is particularly evident by the treatment of creativity in the educational system.

The importance of creativity in education is undermined by the discrepancies between educational administrators' and teachers' claims and behavior. In 1998 the United Kingdom's Secretary of State for Education publicly declared the importance of creativity in the

classroom shortly after he imposed a narrow curriculum emphasizing english and mathematics (Prentice, 2000). Westby and Dawson (1995) found that while teachers reported that they enjoy working with creative students, they typically rated students with creative characteristics as their least favorite. Scott (1999) suggests that this negative perception of creative students may result from teachers' perceptions of the behavior of creative children. When asked to rate a set of fictitious children on a series of behaviors, teachers tended to rate the profiles of creative children as being more disruptive than those of average children. Creativity has become somewhat of a "buzzword" in education (Weiner, 2000), suggesting that the idea of creativity is more favored than actual creative behavior. Some researchers have sought ways of rectifying this discrepancy by seeking methods of increasing individual creative behavior.

Numerous studies have demonstrated that creativity may be enhanced or diminished by the contextual manipulation of a variety of factors (Förster, Friedman, Butterbach, & Sassenber, 2005), including mood (Amabile, Barsade, Mueller, & Staw, 2005; Baas, De Dreu, & Nijstad, 2008),

motivation (Amabile, 1985; 1996), and associative priming (Friedman & Förster, 2001). Amabile (1985) demonstrated how manipulating motivation can decrease creativity among creative writers. Individuals were asked to write a short poem, after which those in experimental conditions completed a series of questions designed to make salient either intrinsic motivation (motivated by an internally derived enjoyment) or extrinsic motivation (motivated by some external reward or punishment). They then completed an additional poem. Amabile found that individuals in the condition where external motivation was made salient wrote significantly less creative second poems than both the intrinsic motivation condition and a control condition, whereas this difference did not exist for the first set of poems. Förster et al. (2005) demonstrated that priming a concept related to creativity, namely deviancy, leads to increased creative behavior. Participants in the study were exposed to a painting representing either conformity or deviancy, while completing a creative generation task (to list as many creative uses for a brick as possible). Förster et al. found that individuals exposed to the painting depicting deviancy were able to list significantly

more creative uses, i.e. originality, as well as a greater number of responses, i.e. flexibility. Baas et al. (2008) demonstrated that creativity is often influenced by mood states, and that certain mood states may be induced to increase creative behavior. In their meta-analysis of 120 studies they found that creativity is enhanced by positive mood states. They also found that certain negative mood states, such as fear and anxiety, lead to decreases in creativity. Although many studies have been successful in employing contextual manipulations to increase creative behavior, thus far effects have been temporary or situation specific (Förster et al., 2005).

Purpose of the Study

Creativity is essential and should be regarded as such. Given the benefits of creativity to individuals, as well as society, efforts should be made to find a method of increasing creative behavior long term.

The purpose of the current study is to determine if individual creativity may be lastingly enhanced by altering a more stable, enduring factor than those in previous studies, namely values.

CHAPTER TWO

LITERATURE REVIEW

Values

There are several fundamental characteristics of values, defined by Schwartz (2003) as "desirable, transituational goals, varying in importance, that serve as guiding principles in people's lives" (p. 267). Values are beliefs, refer to desirable goals, and serve as standards (Rohan, 2000; Schwartz, 2003). For example, an individual who values independence highly believes strongly in the importance of independence and would be emotionally distressed if their own independence were threatened. This individual would have the attainment or maintenance of independence as a primary goal, and this concept would influence their judgment of people and events in their everyday life. Values are not situation dependent (Rohan, 2000; Bardi & Schwartz, 2003). Values have a hierarchical structure, and it is the relative importance of specific values which guide action (Schwartz, 1996). Within an individual's value hierarchy independence may be regarded highly, but another value (such as social power) may be

higher. In this case, the individual may act in ways that enhance social power status, but not independence. For example, working within a corporation, an individual may be forced to sacrifice independence and conform to the standards of the company in order to gain promotion within the company. These recognized characteristics of values are inherent within the values theory developed by Schwartz (1992).

Schwartz (1992) developed a value system theory based on previous research by Rokeach (see 1973 for a review). Schwartz's value theory consists of 10 core values: power, achievement, hedonism, stimulation, self-direction, universalism, benevolence, tradition, conformity, and security. Each core value has a distinct, central motivational goal and is represented by a set of specific single value items (see Table 1). Each single value item correlates highly with other items that compose the same core value (Schwartz, 2003). For example, the single value items which comprise the core value conformity (honoring parents and elders, obedient, politeness, and self-discipline) are highly correlated with one another.

Table 1. *Core Values, Definitions, and Corresponding Single Value Items*

Core Value	Definition	Single Value Items
Hedonism	*Pleasure and sensual gratification of the self.*	Enjoying life; Pleasure; Self-indulgent
Stimulation	*Excitement, novelty, change.*	Varied life; Exciting life; Daring
Self-direction	*Independent thought and action*	Choosing own goals; Creativity; Curious; Freedom; Independent; Self-respect
Universalism	*Understanding, appreciation, tolerance, and protection of welfare of humanity and nature.*	Broadminded; Equality; Protecting the environment; Social justice; Unity with nature; Wisdom; World at peace; World of beauty
Conformity	*Restraint of impulses likely to harm or upset others or to violate social norms*	Honoring parents and elders; Obedient; Politeness; Self-discipline
Tradition	*Respect, acceptance, and commitment to established customs and ideas received from cultural customs.*	Accepting my portion in life; Devout; Humble; Moderate; Respect for tradition
Benevolence	*Preservation and enhancement of the welfare of people with whom one is in frequent contact*	Forgiving; Helpful; Honest; Loyal; Responsible; Mature love; True friendship
Security	*Stability, safety, and harmony of self, relationships, and society*	Clean; Family security; National security; Reciprocation of favors; Social order; Healthy; Sense of belonging
Power	*Social status and prestige, control or dominance over people and resources.*	Authority; Social power; Wealth; Preserving my public image; Social recognition
Achievement	*Personal success through demonstrating excellence according to social standards.*	Ambitious, Capable, Influential; Successful; Intelligent; Self-respect

The core values have a dynamic relationship which may be illustrated in a circular structure, similar to a pie chart (Figure 1). Each core value is at a different polar angle on the chart, with the exception of the values conformity and tradition. The underlying motivational goals of conformity and tradition are very similar, in that both values promote socially imposed expectations over self. However, they remain distinct values in that conformity promotes subservience to those an individual is in contact with often (i.e. family or coworkers), whereas tradition promotes subservience to more abstract concepts (i.e. religion or gender roles). Values spatially close to one another on the chart share underlying motivations, whereas values at opposing ends have conflicting motivations (Schwartz & Boehnke, 2004). For example, the core value power is similar in motivation to the adjacent value achievement, but has conflicting motivations with the value universalism, which lies at the opposite end of the chart. The structure of values can further be broken down into two groups of opposing dimensions: self-enhancement vs. self-transcendence and openness to change vs. conservatism. The self-enhancement (power and achievement) vs.

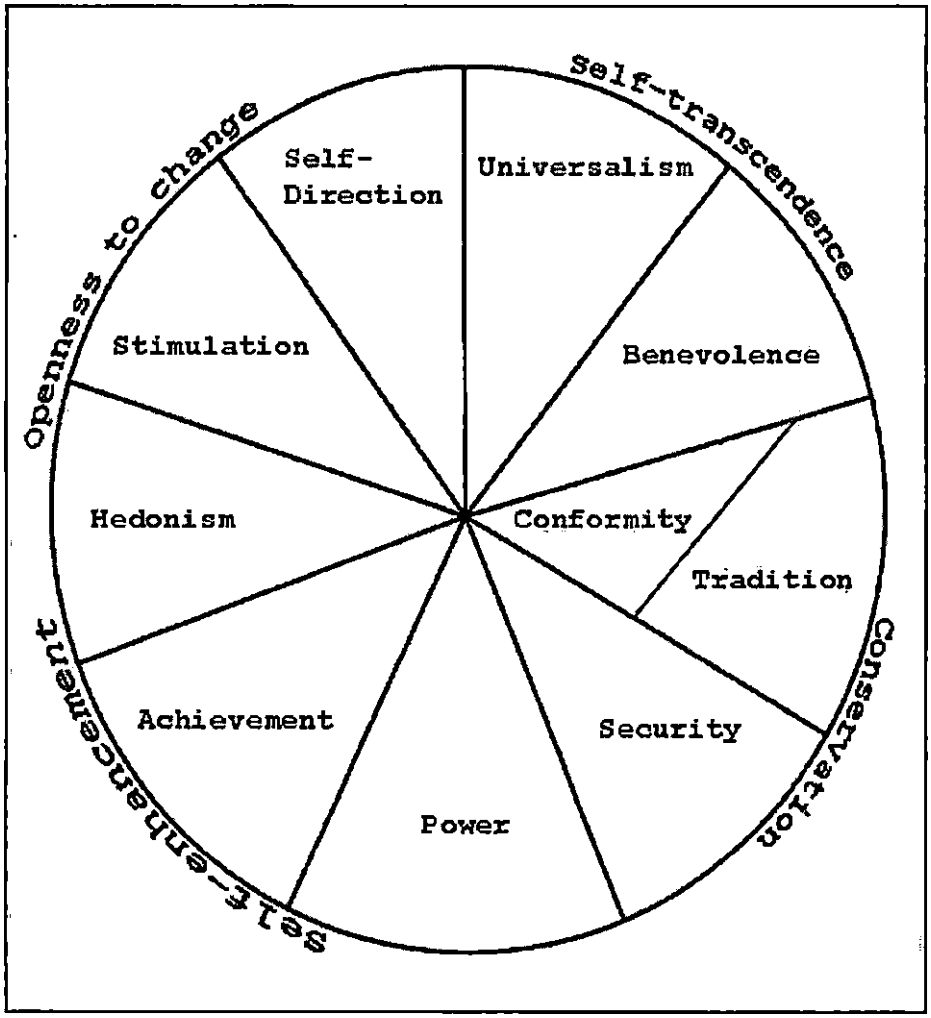


Figure 1. Circular structure of core values

self-transcendence (benevolence and universalism) dimension shows the conflict between serving one's own self interest and serving the interest of others. The openness to change (self-direction and stimulation) vs. conservation (tradition, conformity, and security) dimension shows the conflict between following one's own direction and

following societal norms. Hedonism may be included in both the openness and the self-enhancement dimensions.

Schwartz asserts that the values are comprehensive and universal (Schwartz, 2003). The theory has been assessed on every inhabited continent, in over 60 countries, and in over 200 samples (Schwartz & Boehnke 2004).

Values and Behavior

Values are expressed through everyday behavior (Bardi & Schwartz, 2003; Schwartz, 1996). An individual who values universalism highly will likely seek ways to contribute to social causes, such as volunteering or contributing to charities, whereas an individual who values security highly may seek ways to maintain social order. Many behaviors express multiple values. For example, caring for an elderly parent may be an expression of both benevolence and tradition values. The value-behavior link has been demonstrated in numerous studies, involving diverse behaviors such as voting (Barnea & Schwartz, 1998), delinquency (Bond & Chi, 1997), religiosity (Roccas, 2005), and occupational choice (Sagiv, 2002).

Sagiv (2002) demonstrated a strong value-behavior link in a study of value structure and occupational choice. The study investigated the relationship of Schwartz's (1992) ten basic values and Holland's (1985) six vocational interest types: conventional, enterprising, social, artistic, investigative, and realistic. The study showed significant correlations between core values and vocational choice made by participants who had completed career counseling. For example, universalism and self-direction values correlated highly with artistic vocational interests, whereas achievement, power, and stimulation values correlated highly with enterprising vocational interests. This value-behavior link has also been found in relation to creative behavior.

Recent values research has demonstrated that the value structures of creative individuals differ systematically from their less creative counterparts (Dollinger, Burke, & Gump, 2007; Kasof et al., 2007). Dollinger et al. (2007) found that high scores on a self-report measure of creative accomplishment (Creative Behavior Inventory, Hocevar, 1979) and creative tasks (assessing verbal and visual creativity) were correlated with higher ratings of self-direction,

stimulation, and universalism values. High scores in creativity also correlated with lower ratings of tradition, security, conformity, and power values. In a similar study, Kasof et al. (2007) found that individuals who scored high on verbal, artistic, and mathematic creativity had high self-direction, stimulation, and universalism values and low tradition, conformity, and security values. This systematic relationship was found in different varieties of creative tasks, including writing, collage, and math. Although studies such as these have demonstrated the value-behavior link in reference to one or two specific behaviors, the link has also been found in relation to individuals' patterns of behavior.

Bardi and Schwartz (2003) demonstrated a systematic correlation between value structures and patterns of reoccurring behavior. A descriptive set of six to ten behaviors was created for each of Schwartz's (1992) 10 core values, based on definitions of the each of the values. Participants rated the frequency of each behavior, in relation to their opportunity to do so, on a four point scale from 0 (never) to 3 (frequently). They then completed the Schwartz Values Survey (SVS; Schwartz, 1992) by ranking

57 value items, in order of importance as a principle that guides their lives. The participant's behavior was also rated using the same measure by significant others and peers. Although several of the values correlated only weakly to the corresponding behaviors (security, conformity, benevolence, and achievement) the majority of the values showed considerable correlations. Despite the inclusion of the weaker correlations, a systematic pattern emerged when researchers mapped the values and behaviors, which resulted in very similar circular structures. The study's demonstration of the systematic nature of values and behavior supports the idea that behavior may be changed by altering value structure.

Value Self Confrontation Method

Studies which have attempted to alter value structure often employ the method of Value Self Confrontation (VSC) developed by Rokeach (1973). When employing VSC participants are asked to rank a list of values in hierarchical order, according to their importance as "guiding principles in [their lives]" (Schwartz, 2003, p. 266). They are then shown a list of ranked values

previously derived from a "positive group," as well as one from a "negative group." These two groups are determined by the target focus of the study. For example, Schwartz and Inbar-Saban (1988) employed value rankings obtained from a preliminary study of individuals who had successfully lost weight as the positive group and individuals who had failed to lose weight as the negative group, in their study of the effect of VSC on weight loss. Participants are then directed to focus on one or more target values on which the two group rankings differ and are offered a possible explanation of the disparity. Participants are then directed to compare their own value rankings with those of the positive and negative groups. Variations of the VSC method have also been shown to be successful, which include the exclusion of a positive reference group (Rokeach & McLellan, 1972) and using computer feedback, rather than communication with an experimenter (Rokeach, 1979). Studies employing VSC have demonstrated that an individual's value structure may be successfully altered, and that this alteration may affect behavior long term (Rokeach, 1973).

Studies which have demonstrated the success of VSC have targeted a wide variety of behaviors, including weight

loss (Schwartz & Inbar-Saban, 1988), teaching ability (Greenstein, 1976), and tolerance (Rokeach & McLellan, 1972). In Schwartz and Inbar-Saban's study on weight loss, the wisdom value was increased in relation to the happiness value among participants in the experimental condition after using the Value Self Confrontation method. Participants in the VSC condition also lost more weight than individuals in either the control or a discussion condition (in which participants discussed weight loss goals and struggles with other participants). Greenstein (1976) employed the VSC method in order to increase values related to teaching effectiveness among student teachers. Participants in the experimental condition were presented with the values of "good" teachers, which featured the value mature love highly ranked, and "mediocre" teachers, which featured the value a sense of accomplishment highly ranked, as well as their own. Participants exposed to VSC increased their ranking of the value mature love when retested 13 weeks later. Participants in the experimental condition also received significantly higher scores on teaching evaluations from supervisors unaware of the experiment than those in the control group. Rokeach and

McLellan (1972) used a variation of the VSC method in order to increase tolerance in students. Participants were exposed to previously obtained value rankings, of individuals attending the same university, which featured freedom ranked significantly higher than equality. The experimenter then made a statement about the disparity between the values, suggesting that perhaps students at the university cared more about their own freedom than that of others. Participants in one group were then asked to compare their own rankings to that of the majority. Participants in a second group were exposed to the manipulation, but had no value rankings of their own to compare. Participants in both conditions showed significantly higher increases in the values equality and freedom when retested four weeks later. When solicited by mail by a fabricated committee (whose purpose was to end racism) four months later, individuals responding from both experimental conditions stated that they were willing to join the committee, whereas individuals who had not participated were not. The key to achieving change using the VSC method may be addressing cognitive inconsistencies within the individual.

The psychological process by which VSC is theorized to work is based on cognitive consistency (Greenstein, 1989). Change is initiated by the self-dissatisfaction that an individual experiences when confronted by inconsistencies in the individual's value structure and ideal self-concept (Rokeach, 1973; Schwartz & Inbar-Saban, 1988). By making individuals aware of the value priorities that distinguish them from positive or negative reference groups, these values become associated with the negative or positive behavior. In order to maintain a positive self-image the individual will change the targeted value and corresponding behavior (Rokeach, 1973). The process is similar to Festinger's theory of cognitive dissonance (Festinger & Carlsmith, 1959), whereas psychological distress is created by inconsistency in an individual's cognitions and behavior, which may lead the individual to change the corresponding cognitions. Changes induced by VSC are hypothesized to be unidirectional (Rokeach & Grube, 1979; Greenstein, 1989) and therefore cannot be arbitrarily manipulated. Changes resulting from VSC can only occur if the individual's self image were threatened. Since changes can only be in the one direction that will enhance

self-esteem, VSC seems an ideal method for implementing value change that may benefit society.

Despite evidence that creativity is vital to the well being of individuals and society as a whole, it remains undervalued in modern society. Studies demonstrating increases in creative behavior tend to be situational in nature (Förster et al., 2005). Altering value structures may lead to more enduring results than previous contextual manipulations due to their more stable, enduring nature. The current study seeks to determine if values related to creativity (specifically self-direction, stimulation, and universalism) may be enhanced using The VSC method, and if an increase in these values will therefore result in enhanced creative behavior.

CHAPTER THREE

HYPOTHESES

Hypothesis One

Ratings of values related to creativity (self-direction, stimulation, and universalism) will be the most positively and significantly correlated with creative performance.

Hypothesis Two

Individuals who experience the value self confrontation method will show a greater increase in creative dimension value rank (from session 1 to session 2) than those who do not.

Hypothesis Three

Individuals who experience the value self confrontation method will show a greater increase in creative performance (from session 1 to session 2) than those who do not.

Hypothesis Four

Participants who score greater on creative motivation will be more likely to increase creative values as a result of VSC than those who score lower.

Hypothesis Five

Participants who score greater on creative motivation will be more likely to increase creative performance as a result of VSC than those who score lower.

CHAPTER FOUR

METHODOLOGY

Design

The corresponding design is a single-factor between subjects design. The independent variable is type of treatment (VSC vs. control). The dependent variables are value ratings, creativity scores, and creative motivation scores.

Participants

Participants for the study consisted of 163 students attending California State University San Bernardino. Twenty three cases were discarded due to failure to follow directions, as well as six outliers, leaving 134 participants (15 male, 119 female). Participants ranged from 18-57 years of age (M = 23.69, SD = 6.33). The ethnicity of participants was distributed as follows: 35.1% Hispanic, 29.1% Caucasian, 14.9% African American, 12.7% mixed ethnicity, 5.2% Asian, and 2.9% other. The distribution of university majors was as follows: 66% of participants were in the social and behavioral sciences,

15% were in arts and letters, 14% were in the natural sciences, 2% were undeclared. and 2% were in business, public administration, or education. The marital status of participants was distributed as follows: 78.4% were single, 10.4% were cohabiting, 7.5% were married, 2.9% were divorced or widowed. Those enrolled in select undergraduate psychology or human development courses received extra credit for their participation. All others received no compensation.

Materials

Survey Packet

The survey packet for session one contained an informed consent, a demographic sheet, the Schwartz Values Survey (SVS; Schwartz, 1992), a creative motivation scale, a verbal creativity task and a visual creativity task.

The survey packet for session two contained an additional informed consent, SVS, verbal creativity task and visual creativity task.

Informed Consent

The informed consent for both sessions (Appendix A) outlined the general procedure for the study and explained

the risks and benefits involved in participation. Information on the voluntary nature of the study and confidentiality were addressed. Contact information for the experimenter was also provided.

Demographic Survey

The demographic survey (Appendix B) assessed information on the participant's gender, age, education level, marital status, university major, and political affiliation.

Schwartz Values Survey

The Schwartz Values Survey (SVS; Appendix C) is a self report measure, containing 57 single value items (Schwartz, 1992). Participants are asked to rate each item according to how important the item is "as a guiding principle" (Schwartz, 2003, p. 266) in the participant's life, from -1 (opposed to my values) to +7 (of supreme importance).

The SVS is the most commonly used instrument in modern values research (Lindeman & Verkasalo, 2005). It has been shown to be a valid measure in over 60 countries (Schwartz, 2003).

The SVS was scored according to the draft user's manual (Schwartz, 2008). Data for participants who failed to rate 15 or more values and/or used the same scale anchor 35 or more times were discarded. To control for scale use, scores were centered by each individual survey. The ten core values were created by averaging the single value items belonging to each.

Creativity Tasks

The verbal creativity task (Appendix D) was adapted from Kaufman, Baer, and Cole (2009). Participants were provided with one of two titles: frame or glow. Participants were instructed to take no more than 15 minutes to write a short story based on the title provided.

The visual creativity task (Appendix E) was adapted from Kasof et al. (2007). Participants were provided with one of two titles: dream or light. Participants were instructed to take no more than 15 minutes to complete a drawing for the title provided.

Participants who completed version one of each task during their first session completed version two during their second session, and vice versa. The order of the task

type, as well as the order of the title for each task, was distributed randomly.

Creativity tasks were evaluated using the Consensual Assessment Technique (CAT; Amabile, 1982), following the procedures outlined by Hennessey and Amabile (1999). Creative tasks were rated individually on a scale from one (not at all creative) to five (extremely creative), in relation to one another, and in a random order. Each creative task was rated by seven quasi-experts (student creativity researchers). Instructions to raters may be seen in Appendix F.

Inter-rater reliability for creativity scores was assessed using Cronbach's alpha coefficient. Inter-rater reliability for visual creativity session one and session two were α =.81 and α =.83 respectively. Inter-rater reliability for verbal creativity session one and session two were α =.85 and α =.87 respectively. Ratings were averaged to yield participants' creativity scores.

Pretest verbal creativity scores ranged from 1 - 4.29 (M = 2.68, SD = .67). Pretest visual creativity scores ranged from 1-3.86 (M = 2.15, SD = .65). Posttest verbal creativity scores ranged from 1 - 4.43 (M = 2.56, SD =

.76). Posttest visual creativity scores ranged from 1- 3.57 (M = 2.07, SD = .63).

Creative Motivation Scale

The creative motivation scale (Appendix G) was created for the study in order to determine participants' level of motivation to be creative. Ten statements regarding creativity were presented to participants such as *"Being creative is important to me"* and *"I am driven to be new and different."* Several of the items were reverse coded in order to guard against acquiescence. Responses were collected using a seven point likert scale, with responses ranging from 1 (*completely disagree*) to 7 (*completely agree*). The scale demonstrated acceptable internal consistency (α = .84) with the removal of item 7 (*I think creative people tend to be weird*). A total scale score was obtained by averaging ratings on the remaining nine items. Creative motivation scores (N = 132) ranged from 3.56 - 7.00 (M = 5.61, SD =.73).

Value Rankings

The value ranking information was presented in a three-leaf color brochure. The right interior leaf of the brochure contained a list of the ten core values (listed in

alphabetical order) grouped with the single value items belonging to each. The left interior leaf contained a table in which the participant's value ranking was handwritten by the experimenter (in numbered ascending order), along with a brief explanation of how the ranking was calculated. In the control condition the center leaf was blank. In the experimental condition the center leaf contained a list of values derived from the average value rankings of individuals found in past studies to be more creative than others (Dollinger et al., 2007; Kasof et al., 2007). Both versions of the value ranking brochures may be seen in Appendix H.

Writing Prompt

In order to increase the saliency of the VSC treatment, participants were asked to describe possible reasons for the results revealed to them by the experimenter. In the experimental condition, participants were asked to describe possible reasons for why the targeted values may be related to high levels of creativity. In the control condition, participants were asked to describe possible reasons for why they ranked

their top three values as such. Writing prompts for each condition may be seen in Appendix I.

Debriefing Statement

The debriefing statement (Appendix J) informed the participant of the true nature of the study and thanked them for their participation. The expected conclusion date for the study and the experimenter's contact information was also provided.

Procedure

Participants were tested individually and randomly assigned to one of two conditions: control (N = 66) or VSC (N = 68). Session 1 occurred two to seven days prior to session 2.

Session 1

A survey packet containing informed consent, the demographic survey, and the Schwartz Values Survey (SVS) was distributed by the experimenter. Participants were asked to complete the materials and return them to the experimenter. Upon returning the materials to the experimenter, participants were given a small packet containing the verbal creativity task, visual creativity

task, and creative motivation scale. The SVS was scored by the experimenter, while the participant completed the creative task packet. Upon completion of the creative task packet, participants in both conditions were presented with the completed value ranking brochure and were told:

> We are investigating values, creativity, and motivation. Here is a list of the items you rated, along with the composite, or core, value that each belongs to, listed in alphabetical order. On this next page are your core value rankings. The ratings you gave for each of the individual values on the survey were grouped according to which core value they belonged to and averaged. The value at the top had the highest average mean and the one at the bottom had the lowest.

Participants in the control condition were given no further information.

Participants in the VSC condition were further told:

> In the middle here are the average core value rankings for individuals who have been found to be more creative in past studies. These are individuals that

have performed best on tasks like the ones you have just completed.

Participants were then asked to complete a short writing prompt describing possible reasons for the results revealed to them. Once all materials were received by the experimenter, the participant was thanked for their participation and given the values brochure to keep.

Session 2

A survey packet containing informed consent, the Schwartz Values Survey (SVS), the verbal creativity task, and the visual creativity task were distributed by an experimenter. Upon completion of the packet, the participant was debriefed and thanked for their participation.

Data Analysis

Pearson correlation coefficient, Spearman rank correlation coefficient, Analysis of Covariance, paired sample *t*-tests, and moderated linear regression were used to analyze data.

CHAPTER FIVE

RESULTS

Preliminary Analyses

Data was submitted to a hierarchical regression in order to determine if the number of days between session one and session two may have overly influenced results. Scores on each creative task and ratings on each targeted value were entered as the dependent variable in separate analyses. Predictors for each analysis were the corresponding session one scores and ratings (entered in the first step) and the number of days between sessions (entered in the second step).

The number of days participants waited between completing session one and session two did have a significant impact on scores for the verbal creativity task F (2, 131) = 39.08, $p < .001$, adjusted $R^2 = .36$, ($b = .15$), t (2, 131) = 2.11, $p < .05$. The number of days participants waited between completing session one and session two did not have a significant impact on scores for the visual creativity task F (2, 131) = 9.26, $p = < .001$, adjusted $R^2 = .003$, ($b = -.05$), t (2, 131) = -.63, $p = .53$.

No significant differences were found for the number of days participants waited between completing session one and session two for ratings on the self-direction value, F (2, 131) = 55.67, $p < .001$, adjusted $R^2 = .45$, ($b = .05$), t (2, 131) = .773, $p = .44$, the stimulation value, F (2, 131) = 55.30, $p = <.001$, adjusted $R^2 = .45$, ($b = -.00$), t (2, 131) = -.04, $p = .97$, or the universalism value, F (2, 131) = 158.09, $p < .001$, adjusted $R^2 = .70$, ($b = .01$), t (2, 131) = .12, $p = .90$.

Scores on creative tasks were submitted to paired sample t-tests in order to determine if significant differences exist between creativity scores by task type (verbal vs. visual). A significant difference was found between scores on verbal and visual creativity tasks during session one, t (133)= 7.01, $p < .001$. A significant difference was also found between scores on verbal and visual creativity during session two, t (133) = 6.46, $p < .001$. Scores on verbal creativity tasks during session one (M = 2.68, SD =.70) and session two (M = 2.56, SD = .76) were both higher than scores on visual creativity tasks during session one (M = 2.15, SD = .65) and session two (M = 2.07, SD = .63). Examples of the highest and

lowest scoring verbal and visual creativity tasks may be seen in Appendix K.

Scores on creative verbal tasks were submitted to paired sample *t*-tests in order to determine if significant differences exist between verbal task title (glow versus frame). No significant difference was found for creativity scores on stories with the title glow ($M = 2.61$, $SD = .79$) and those with the title frame ($M = 2.63$, $SD = .67$), $t\ (133) = -.148$, $p = .88$.

Scores on creative visual tasks were submitted to paired sample *t*-tests in order to determine if significant differences exist between visual task title (dream versus light). A significant difference was found for creativity scores on drawings with the title light ($M = 2.02$, $SD = .76$) and those with the title dream ($M = 2.21$, $SD = .56$), $t\ (133) = -2.42$, $p < .05$. Although scores on the drawings entitled glow were significantly higher than on those entitled light, our results may not have been unduly influenced due to the fact that each title was distributed randomly during both sessions.

Performance on pretest verbal and visual creativity tasks were analyzed using Pearson's correlation

coefficient, in order to determine if the creative tasks were correlated, and could therefore be combined to create a single creativity score. Scores on the creative tasks were not found to be significantly correlated, $r = .17$, $p = .05$. Therefore all analyses were conducted for each creative task separately.

Hypothesis One

Creative tasks and values were analyzed in order to determine if the targeted values (self-direction, stimulation, and universalism) were positively correlated with creative performance and if the structure of values was consistent with past studies.

Spearman rank correlations for pretest verbal creativity and core values were consistent with past studies and may be seen in Figure 2. As predicted the three values with the largest magnitude were self-direction $r = .23$, $p < .01$, stimulation $r = .10$, $p = .25$, and universalism, $r = .19$, $p < .05$. However, only the self-direction and universalism correlations proved to be significant.

Table 2. *Verbal Creative Performance and Core Value Correlations*

Value	Pretest Verbal Correlations
Self-direction	.23**
Universalism	.19*
Stimulation	.10
Hedonism	.07
Achievement	.01
Security	-.03
Power	-.08
Benevolence	-.11
Conformity	-.15
Tradition	-.32**

Note. $**p < .01$, $*p < .05$

Spearman rank correlations for pretest visual creativity and core values was not consistent with past studies (see Table 3). Two of the three predicted values had the highest magnitude correlations: self-direction,

r = .25, p < .01 and stimulation, r = .18, p < .05. However, universalism had the 4th highest magnitude correlation (after conformity) and did not reach significance, r = .06, p = .53.

Table 3. *Visual Creative Performance and Core Value Correlations*

Value	Pretest Visual Correlations
Self-direction	.25**
Stimulation	.18*
Conformity	.11
Universalism	.06
Achievement	.04
Benevolence	-.01
Tradition	-.03
Power	-.07
Hedonism	-.12
Security	-.15

Note. **p < .01, *p < .05

The self-direction core value was examined after removing the single value item *creativity* from the composite, in order to determine if the item was the sole cause for the correlation with creative performance. Self-direction continued to be significantly correlated with visual creativity, $r = .21$, $p < .05$, but was no longer significantly correlated with verbal creativity, $r = .16$, $p = .06$. Removing the single value item *creativity* from the self-direction composite did not affect the value structure for visual creativity. It did however cause self-direction to move to the second rank among the 10 values (after universalism) in verbal creativity.

Hypothesis Two

Data was submitted to a one-way analysis of covariance (ANCOVA) to evaluate the effectiveness of the VSC method on increasing creative dimension values. An ANCOVA was employed in order to reduce error variance (Dimitrov & Rumrill, 2003). Condition was entered as the fixed factor for each analysis, with session two ratings of the targeted value entered as the dependent variable and session one ratings of the value entered as the covariate.

No significant difference was found between the control group and VSC group rating means for the self-direction value after covarying the session one scores, F (1, 131) = .833, p = .36. Only .6% of variance in session two scores was accounted for by condition after controlling for session one scores.

No significant difference was found between the control group and VSC group rating means for the stimulation value after covarying the session one scores, F (1, 131) = .150, p = .70. Only .1% of variance in session two scores was accounted for by condition after controlling for session one scores.

No significant difference was found between the control group and VSC group rating means for the universalism value after covarying the session one scores, F (1, 131) = .299, p = .59. Only .2% of variance in session two scores was accounted for by condition after controlling for session one scores.

Values were ranked by mean in order to determine value structure change from session one to session two (see Table 4). Although the value of the means vary from session to session, as well as by group, the structure of values was

Table 4. *Values Ranked by Sample Means for Session 1 and 2*

	Session 1		Session 2	
Value	Mean	SD	Mean	SD
Benevolence	5.07	3.35	5.16	3.65
Achievement	4.89	2.85	3.59	2.76
Self-direction	3.09	3.32	2.87	3.39
Security*	1.45	3.76	.73	3.52
Conformity*	1.08	3.05	.78	2.94
Hedonism	.29	2.84	-.12	2.99
Universalism	-.92	5.37	-.52	5.76
Stimulation	-2.56	2.97	-1.90	3.17
Tradition	-3.94	4.36	-3.34	4.28
Power	-8.48	4.89	-8.43	5.76

Note. * values interchanged in rank from session 1 to 2

consistent across all variations (with the exception of security and conformity which interchanged in some instances). The mean change scores are presented for each group in Table 5.

Table 5. *Change Score Statistics by Condition*

	Control		VSC	
Value	Mean	SD	Mean	SD
Achievement	-.28	2.09	.05	2.39
Benevolence	.30	2.76	.23	3.44
Conformity	-.04	1.89	-.54	2.14
Hedonism	-.27	2.03	-.54	2.00
Power	.00	3.27	.10	3.04
Security	-.43	3.19	-.10	2.37
Self-direction	-.37	2.11	-.07	3.18
Stimulation	.49	2.26	.83	2.67
Tradition	.44	2.85	.76	2.70
Universalism	.29	3.28	.52	3.07

Hypothesis Three

Data was submitted to a one-way analysis of covariance (ANCOVA) to evaluate the effectiveness of the VSC method on increasing creative performance. Condition was entered as the fixed factor for each analysis. Session two scores on the creative task were entered as the dependent variable,

whereas session one scores on the task were entered as the covariate.

No significant difference was found between the control group and VSC group means for performance on the visual creativity task after covarying the session one scores, F (1, 131) = .005, p = .95. No variance in session two scores was accounted for by condition after controlling for session one scores.

No significant difference was found between the control group and VSC group means for performance on the verbal creativity task after covarying the session one scores, F (1, 131) = .030, p = .86. No variance in session two scores was accounted for by condition after controlling for session one scores.

Paired samples t-tests were conducted to evaluate change in creative performance from session one to session two for the sample. A significant difference was found in performance on the verbal creativity task for session one (M = 2.68, SD = .69) and session two (M = 2.56, SD = .76), t (133) = 2.04, p < .05. Performance on the verbal creativity task decreased from session one to session two

for both groups. Means for verbal creative performance in both sessions may be seen by group in figure 2.

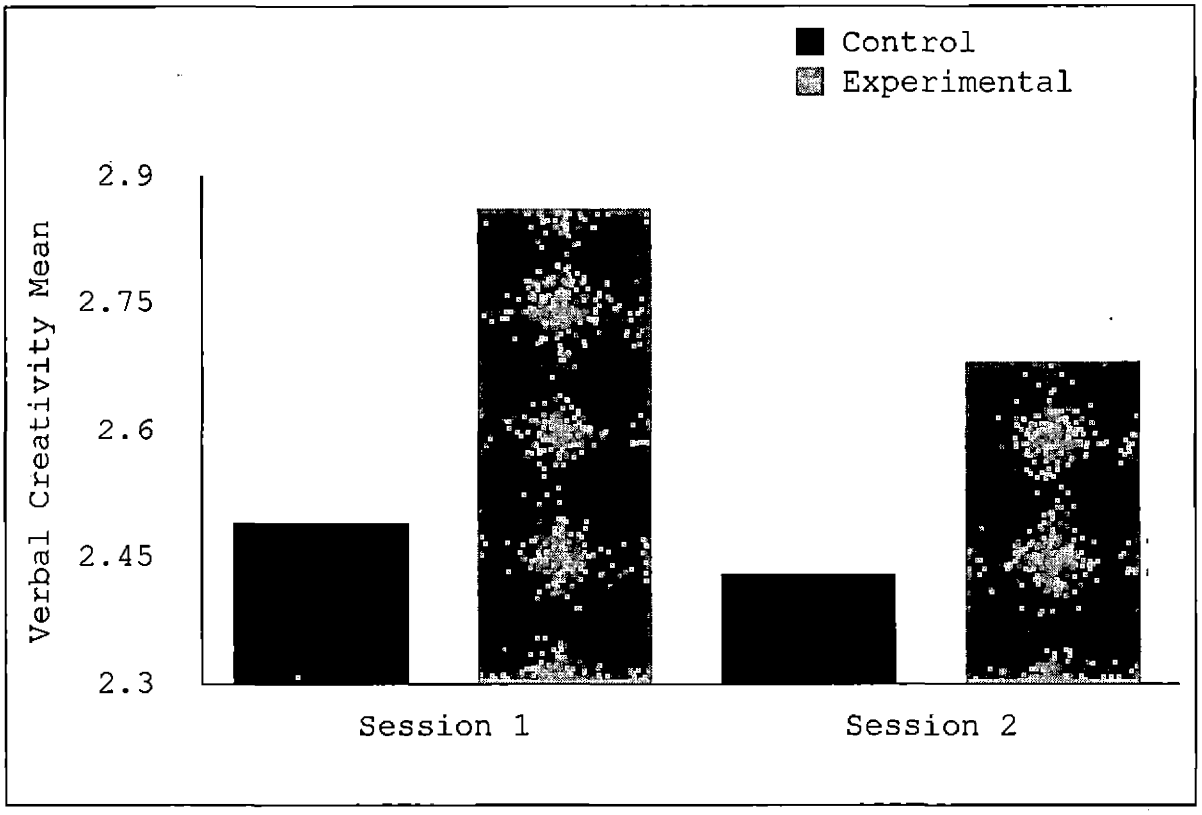


Figure 2. Verbal creative performance score means for control and experimental groups during session one and session two

No significant difference was found in performance on the visual creativity task for session one (M = 2.15, SD = .65) and session two (M = 2.07, SD = .63) t (133) = 1.27,

p = .21. Performance on the visual creativity task decreased from session one to session two for both groups. Means for visual creative performance in both sessions may be seen by group in figure 3.

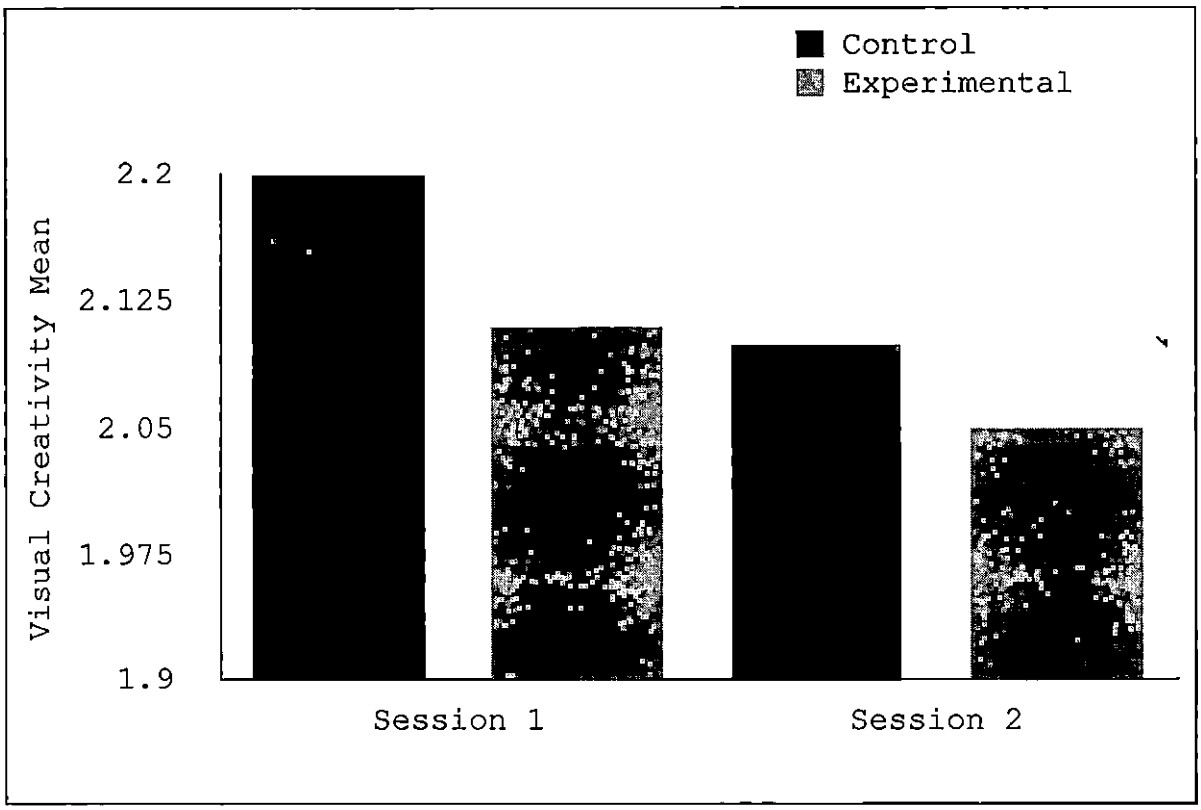


Figure 3. Visual creative performance score means for control and experimental groups during session one and session two

Hypothesis Four

Data was submitted to a moderated linear regression to determine if the level of creative motivation would affect the effectiveness of VSC. Each targeted value was entered as the dependent variable in separate analyses. Predictors for each analysis were the creative motivation scores and condition (entered in the first step), and the interaction term (created by multiplying standardized motivation scores and recoded condition) entered in the second step.

The interaction effect of motivation X condition on self-direction value change was significant F (3, 128)= 1.82, p = .15, ΔR^2 = .03 (b = 1.48), t (3, 128) = 2.10, $p < .05$. In order to determine if this effect was due to demand characteristics (whereas participants high on creative motivation would rate the single value item *creativity* unusually high, after being informed of the link between creativity and values) self-direction was investigated further. After removing the single value item *creativity* from the self-direction composite the interaction effect was no longer significant F (3, 128)= 1.52, p = .51, ΔR^2 = .01 (b = .099), t (3, 128) = 1.14, p = .26.

The interaction effect of motivation X condition on stimulation value change was not significant F (3, 128)= .58, p = .63, ΔR^2 = .001 (b = .81), t (3, 128) = 1.14, p = .26.

The interaction effect of motivation X condition on universalism value change was not significant F (3, 128)= .96, p = .44, ΔR^2 = .000 (b = .10), t (3, 128) = .141, p = .89.

Hypothesis Five

Data was submitted to a moderated linear regression to determine if the effect of VSC on creativity tasks would be moderated by creation motivation. Scores on each creative task were entered as the dependent variable in separate analyses. Predictors for each analysis were the creative motivation scores and condition (entered in the first step), and the interaction term (created by multiplying standardized motivation scores and recoded condition) entered in the second step.

The interaction effect of motivation X condition on verbal creativity change was not significant F (3, 128) = .74, p = .53, ΔR^2 = .005 (b = -.60), t (3, 128) = -.842,

p = .40. The interaction effect of motivation X condition on visual creativity change was not significant F (3, 128) = .60, p = .61, ΔR^2 = .01 (b = -.95), t (3, 128) = -1.32, p = .19.

CHAPTER SIX

CONCLUSIONS AND RECOMMENDATIONS

Discussion

The present study sought to determine if values related to creativity may be enhanced using the VSC method of value structure change, and if an increase in values found to be related to creativity would therefore result in enhanced creative behavior. The study obtained mixed results.

The Value Creativity Link

In accordance with our hypothesis, self-direction, stimulation, and universalism values were found to have the highest magnitude correlations with verbal creativity. Visual creativity was most positively correlated with self-direction and stimulation. However, universalism was the fourth most positively correlated value with visual creativity, after conformity, which is contrary to our hypothesis. Self-direction was the only value found to have a significant positive correlation with both verbal and visual creativity. Universalism also had a positive significant correlation with verbal creativity, whereas

stimulation also had a positive significant correlation with visual creativity.

The verbal creativity value structure (values ranked by magnitude of correlation with creative verbal performance) was consistent with the value structure found to be correlated with creativity in past studies, whereas this was not the case with visual creativity. This is likely due to the fact that in past studies creative products have been combined to produce a single creativity score (Dollinger, Burke, & Gump, 2007; Kasof et al., 2007). Within the Consensual Assessment Technique (Amabile, 1996) it is accepted that measuring different domains requires different types of tasks and methodologies. Since verbal and visual creativity were not found to be correlated in this study they were analyzed separately, yielding the distinct value structures.

The Effectiveness of Value Self Confrontation

Contrary to our hypothesis, no significant difference was found between the control and VSC groups regarding both value and creativity change. This suggests that the VSC method may not be effective in enhancing values related to creativity or creative performance.

Many of the past studies which have attempted to alter values and related behavior have employed individuals with a high level of motivation to change the targeted behavior, as was the case with studies regarding the effects of VSC on weight loss (Schwartz & Inbar-Saban, 1988). It is possible that the manipulation in our study was not strong enough due to individuals' devaluation of creativity (Rokeach & Ball-Rokeach, 1989 Inglehart, Basanez, & Moreno, 1998). Indeed, some individuals may have an aversion to the concept of creativity due to negative stereotypes about creative people (Schlesinger, 2009).

Individuals in our study had differing levels of motivation to be creative. Therefore, we also examined how level of motivation may impact the effectiveness of VSC. Contrary to our hypothesis, level of motivation to be creative had no significant impact on the effectiveness of VSC for value change or creative performance. The reason why VSC may not be effective on creativity (even among those highly motivated to be creative), whereas it has been effective with other constructs, requires further investigation.

A possible contributing factor as to why VSC may not be effective with creativity is the participants' implicit views of creativity, whether they believed that creativity is a fixed or malleable trait (Makel, 2008). The malleable trait view of creativity would suggest that creative performance can be changed by situational factors. However, the fixed trait view of creativity, that creativity is an innate trait that cannot be changed, is common among laypersons (Plucker, Beghetto, & Dow, 2004; Makel, 2008). Makel found that 38% of individuals believe creativity to be a fixed trait. Silvia, Kaufman, and Pretz (2009) suggest that the choices individuals make are influenced by these types of beliefs. Therefore, an individual who has a fixed trait view of creativity and assumes that they cannot improve creative performance may view the creative structure as unattainable. Whereas it is widely accepted that it is possible to lose weight for example, individuals may not understand that it is possible to increase creativity.

The decline in creative performance from session one to session two in both groups was unexpected and somewhat puzzling. There are many factors which have been found to

undermine creativity in past studies, including expectation of a task-contingent reward, evaluation, and competition (see Hennessey, 2003 for review). However, there is no way of knowing the exact cause of the decline in creativity during the current study.

Implications

Our results have some important implications for the study of creativity.

The finding that performance on verbal and visual creativity tasks were not found to be correlated, as well as have distinct value structures, supports the theory of domain specificity in creativity. Creative domain specificity would suggest that creativity in one domain is independent of creativity in another (Plucker, 1998), whereas creative domain generality suggests that creativity is constant across domains (Baer, 1998). Although the vast majority of research done in creativity over the past 50 years has regarded creativity as domain general (Baer, 1998), recent studies have found increasing support for creativity as being domain specific. Some researchers have begun attempts at establishing a "middle ground", creating

models that demonstrate where creative generality ends and specificity begins.

The Amusement Park Theoretical (APT) Model of Creativity (Baer & Kaufman, 2005) was created to reconcile generality and specificity theories of creativity. The model, which uses the analogy of an amusement park, moves from being very general to very specific, across four levels. The first level of the model, initial requirements, states that certain criteria in intelligence, motivation and environment, must be met in order to produce creative work. The second level of the model, general thematic area, relates to the general area that one applies creativity, such as the arts or science. The third level, domains, distinguishes between the diverse applications within a thematic area. Within the thematic area of the arts there may be many different domains, such as visual arts and music. The final level of the model, micro domains, is task specific. Within the visual arts domain, a micro domain may be painting or sculpture. The premise of the model is that as one moves across the levels, creativity moves from being rather general to domain specific.

The verbal and visual tasks completed for the current study would be situated at the general thematic level of creativity in the model. Kaufman, Cole, and Baer (2009) found evidence for seven different general thematic types: Artistic-Verbal, Artistic-Visual, Entrepreneur, Interpersonal, Math/Science, Performance, and Problem-Solving. It is possible that each of these creative domains has a distinct value structure.

The finding that verbal creative performance scores were higher than visual creative performance in both sessions may be due to the level of experience that participants have had with each task type. Most university students are required to express themselves through writing regularly, whereas this is not the case with drawing. The majority of participants' major area of study was in the social and behavioral sciences, a field which may be conducive to verbal creativity (Cheung, Rudowicz, Yue, & Kwan, 2003).

The results of the current study also offers further validation for the test-retest reliability of the Schwartz Values Scale.

Limitations and Future Research

There are several limitations to the present study. Although the use of college students alone as participants for psychological research is common, it may affect the generalizability of our results. There is also no way of knowing how much attention participants paid to the task at hand. Participants may not have read the directions or questions thoroughly, as evidenced by the high number of cases which were discarded due to failure to follow directions properly. The results of the study may lead to false conclusions if the participants rated their values arbitrarily. Given that participants completed the creative motivation scale after completing the creative tasks, it is possible that creative motivation scores are inflated. For practical purposes the number of days between session one and session two were left at the sole discretion of the participant (within the alloted time frame). Therefore, any variability in scores between days may be due to this self assignment.

Use of the Schwartz Values Survey has some potential drawbacks. The SVS, being a self-report measure, is susceptible to false reporting from participants, either

from deceit or low meta-cognitive ability (Rohan, 2000). Schwartz (2003) has also reported that individuals with little or no education may encounter problems with the instrument. Although these problems do exist, the purpose of the study, as well as the assumed level of intellect of the population being used, may preclude these problems from overly influencing our results. The Portrait Values Questionnaire (PVQ; Schwartz, Melech, Lehmann, Burgess, Harris, & Owens, 2001) has been developed to address these concerns. It is a less abstract method of measuring the ten core values, which may be more appropriate for future research.

There are also some issues with our use of the Consensual Assessment Technique that should be noted. Raters for the creativity tasks consisted mainly of quasi-experts (student creativity researchers), not all of whom have had direct experience with the verbal or visual arts. It has been suggested that only expert judgements of creative products can be considered valid (Baer, 2008). Baer argues that raters must be experts in the domain being judged to the extent that if one were investigating creative cooking, experienced chefs should be employed as

raters. There also exists no standardized scores for the CAT, which restricts the comparisons that are able to be made (Baer, 2008; Kaufman, Baer, & Cole, 2009). For example one cannot compare the creative performance scores obtained during this study to those of another, even if the same tasks were employed (given the different raters and grouping of rated tasks).

The creative motivation scale was created solely for use in this study, and as such has not been tested for test-retest reliability or criterion or construct validity.

Our study was limited to rating creativity in short story writing and drawing, which is in no way a comprehensive assessment of creativity. The Creative Domains Questionnaire (Kaufman et al., 2009) assesses 56 different domains of creativity. The varied domains include painting, cooking, teaching, and interacting with family. Given such a wide variety of domains, participants could easily be creative in domains not measured by the current study.

It is also possible that different factors related to creativity were affected (but not measured) by the study, such as seeking or engaging in creative tasks or creative

ideation. Runco, Plucker, and Lim (2001) suggest that ideas are creative products, and are therefore subject to evaluation. The conclusions that we are able to make based on the results of this study are limited to value structure and creative performance on the specific tasks employed.

There are several recommendations for researchers who may undertake this type of study in the future. In addition to creative tasks, different measurements of creativity should be included in the study. Possible measures to administer in future studies include the Creative Achievement Questionnaire (CAQ; Carson, Peterson, & Higgins, 2005), a self report checklist of creative accomplishment across domains, and the Runco Ideational Behavior Scale (RIBS; Runco, Plucker, & Lim, 2001), a self-report measure of creative ideation. Not only would this allow researchers to detect how different types of creativity relate to value structures, but would also allow researchers to determine if different facets of creativity are more susceptible to the influence of VSC. Participants should also be given a longer amount of time between session one and session two (which should be controlled for), particularly since two to seven days may not be

enough time to cultivate creativity to the extent that it would take to see a significant increase. Several additional measurement intervals may be employed in order to determine if creativity does increase continually with time. When rating the creative tasks experts within the domains being judged should be employed.

There are also several key elements that may be addressed in future research in order to clarify some of the findings of the current study.

Given that motivation was not found to be a significant moderator in the current study, other possible moderating factors on the effectiveness of VSC should be investigated. The extent to which malleable versus fixed implicit beliefs relate to the effectiveness of VSC should be investigated, and may explain why VSC was not effective in this study. Other possible moderators to assess include the use of concrete versus abstract constructs.

Studies that have used creative tasks to investigate the link between creativity and value structure in the past have combined the scores of different types of tasks (such as drawing and poetry) to create a single creativity score (Dollinger, Burke, & Gump, 2007; Kasof et al., 2007). Not

only has this resulted in low composite coefficients in some cases, but the findings of this study suggest that it may also lead to faulty conclusions. Different types of creativity may relate to value structures in distinct ways. Future studies should examine how different domains of creativity relate to values, as correlations with different domains may result in distinct value structures.

A final issue is the lack of a publicly available measure of creative motivation. Existing scales related to creative motivation either do not measure the precise construct of motivation to be creative, such as the vDiffer scale (Joy, 2001; which assesses a need to be different), or they are not easily accessible. The measure completed for this study is not comprehensive enough to assess the complex construct of motivation, therefore it is strongly recommended that a valid measure of this type be created.

It is important for researchers to continue to make efforts to find an effective method of increasing creativity long term. Research on increasing values related to creativity should be explored further. If individuals give a higher priority to values associated with creativity, then they may be more likely to engage in

creative behaviors, or at least to encourage and support others that do so.

APPENDIX A

INFORMED CONSENT

Session One

CALIFORNIA STATE UNIVERSITY
SAN BERNARDINO

College of Social and Behavioral Sciences
Department of Psychology

Informed Consent

You are invited to participate in a study designed to investigate personal values in relation to creativity and motivation. This study is being conducted by Christa Taylor under the supervision of Dr. James Kaufman. This study has been approved by the Department of Psychology Institutional Review Board Sub-Committee of California State University, San Bernardino, and a copy of the official Psychology IRB stamp of approval should appear somewhere on this consent form.

In this study you will be asked to rate a list of personal values and complete several short tasks. Upon completion of these materials you will be given information regarding the results of your value survey and asked complete a short writing prompt. The session should take approximately 40 to 60 minutes to complete. This is the first of two sessions. We ask that you return in two to seven days to complete the second session of the experiment. All of your responses will be held in the strictest of confidence by researchers. You will be issued a survey number for use during the two sessions of the experiment. All identifying data will be destroyed upon completion of your participation. All data will be reported in group form only.

Your participation in this study is completely voluntary. You are free not to answer any of the questions and withdraw at any time during the study, without penalty. This study involves no risk beyond that of everyday life, nor any direct benefits to you as an individual. If you are a CSUSB student, you may receive 3 units of extra credit (for each of the two sessions) in a selected Psychology class at your instructor's discretion. **To ensure the validity of the study we ask that you do not discuss this study with other potential participants.**

If you have any questions of concerns about this study, please feel free to contact Christa Taylor at taylc301@csusb.edu.

By placing an X in the space below, I acknowledge that I have been informed of, and that I understand, the nature and purpose of this study, and I freely consent to participate. I also acknowledge that I am at least 18 years of age.

Participant's X _____

Date: _____

CALIFORNIA STATE UNIVERSITY, SAN BERNARDINO
PSYCHOLOGY INSTITUTIONAL REVIEW BOARD SUB-COMMITTEE
APPROVED 11/18/09 VOID AFTER 11/18/10
IRB# H-09FA-11 CHAIR

Session Two

CALIFORNIA STATE UNIVERSITY
SAN BERNARDINO

College of Social and Behavioral Sciences
Department of Psychology

Informed Consent

You are invited to participate in a study designed to investigate personal values in relation to creativity and motivation. This study is being conducted by Christa Taylor under the supervision of Dr. James Kaufman. This study has been approved by the Department of Psychology Institutional Review Board Sub-Committee of California State University, San Bernardino, and a copy of the official Psychology IRB stamp of approval should appear somewhere on this consent form.

In this study you will be asked to rate a list of personal values and complete several short tasks. The survey should take approximately 40 to 60 minutes to complete. This is the second of two sessions. All of your responses will be held in the strictest of confidence by researchers. All identifying data will be destroyed upon completion of your participation. All data will be reported in group form only.

Your participation in this study is completely voluntary. You are free not to answer any of the questions and withdraw at any time during the study, without penalty. This study involves no risk beyond that of everyday life, nor any direct benefits to you as an individual. If you are a CSUSB student, you may receive 3 units of extra credit (for each of the two sessions) in a selected Psychology class at your instructor's discretion. **To ensure the validity of the study we ask that you do not discuss this study with other potential participants.**

If you have any questions of concerns about this study, please feel free to contact Christa Taylor at taylc301@csusb.edu.

By placing an X in the space below, I acknowledge that I have been informed of, and that I understand, the nature and purpose of this study, and I freely consent to participate. I also acknowledge that I am at least 18 years of age.

Participant's X _____

Date: _____

CALIFORNIA STATE UNIVERSITY, SAN BERNARDINO
PSYCHOLOGY INSTITUTIONAL REVIEW BOARD SUB-COMMITTEE
APPROVED 11/18/09 VOID AFTER 11/18/10
IRB# H-09FA-11 CHAIR

The California State University
Bakersfield • Channel Islands • Chico • Dominguez Hills • East Bay • Fresno • Fullerton • Humboldt • Long Beach • Los Angeles • Maritime Academy
Monterey Bay • Northridge • Pomona • Sacramento • San Bernardino • San Diego • San Francisco • San Jose • San Luis Obispo • San Marcos • Sonoma • Stanislaus

APPENDIX B

DEMOGRAPHIC SURVEY

Background Items

Your gender (circle): 1. Male 2. Female

Your age: _____Years

How many years of education has each person completed (since 1st grade)? (estimate if not certain)

_____Yourself

_____Your mother

_____Your father

Your Marital status (circle):

1. Single 2. Married 3. Cohabiting 4. Divorced 5. Widowed

Your current university major: _____

Of which of the following groups are you a member? (circle all that apply)

1. Asian/Asian American
2. Black/African American
3. Hispanic/ Hispanic American
4. Middle Eastern/Arab
5. Native American
6. White/Cauacasian
7. Mixed Ethnicity
8. Other_____

Which of the following political parties comes closest to representing your views? (circle)

1. Democratic
2. Republican
3. Independent
4. Not Sure
5. Other_____

APPENDIX C

SCHWARTZ VALUES SURVEY

Values Survey

In this questionnaire you are to ask yourself: "What values are important to ME as guiding principles in MY life, and what values are less important to me?"

There are two lists of values on the following pages. These values come from different cultures. In the parentheses following each value is an explanation that may help you to understand its meaning.

Your task is to rate how important each value is for you as a guiding principle in your life. Use the rating scale below:

The higher the number, the more important the value is as a guiding principle in YOUR life. For example:

0 means the value is not at all important, it is not relevant as a guiding principle for you.
3 means the value is important.
6 means the value is very important.

-1 is for rating any values opposed to the principles that guide you.
7 is for rating a value of supreme importance as a guiding principle in your life; ***ordinarily there are no more than two such values.***

In the space before each value, write the number (-1,0,1,2,3,4,5,6,7) that indicates the importance of that value for you, personally. **Try to distinguish as much as possible between the values by using all the numbers.** You will, of course, need to use numbers more than once.

VALUES LIST I

Before you begin, read the values in List I, choose the one that is most important to you and rate its importance. Next, choose the value that is most opposed to your values and rate it 1. If there is no such value, choose the value least important to you and rate it 0 or 1, according to its importance. Then rate the rest of the values in List I.

AS A GUIDING PRINCIPLE IN MY LIFE, this value is:

Opposed to my values	Not important			Important			Very important	Of supreme importance
-1	0	1	2	3	4	5	6	7

1) _____ EQUALITY (equal opportunity for all)

2) _____ INNER HARMONY (at peace with myself)

3) _____ SOCIAL POWER (control over others, dominance)

4) _____ PLEASURE (gratification of desires)

5) _____ FREEDOM (freedom of action and thought)

6) _____ A SPIRITUAL LIFE (emphasis on spiritual not material matters)

7) _____ SENSE OF BELONGING (feeling that others care about me)

8) _____ SOCIAL ORDER (stability of society)

9) _____ AN EXCITING LIFE (stimulating experiences)

10) _____ MEANING IN LIFE (a purpose in life)

11) _____ POLITENESS (courtesy, good manners)

12) _____ WEALTH (material possessions, money)

13) _____ NATIONAL SECURITY (protection of my nation from enemies)

14) _____ SELF RESPECT (belief in one's own worth)

15) _____ RECIPROCATION OF FAVORS (avoidance of indebtedness)

16) _____ CREATIVITY (uniqueness, imagination)

17) _____ A WORLD AT PEACE (free of war and conflict)

18) _____ RESPECT FOR TRADITION (preservation of time honored customs)

19) _____ MATURE LOVE (deep emotional & spiritual intimacy)

20) _____ SELF DISCIPLINE (self-restraint, resistance to temptation)

21) _____ PRIVACY (the right to have a private sphere)

22) _____ FAMILY SECURITY (safety for loved ones)

23) _____ SOCIAL RECOGNITION (respect, approval by others)

24) _____ UNITY WITH NATURE (fitting into nature)

25) _____ A VARIED LIFE (filled with challenge, novelty and change)

26) _____ WISDOM (a mature understanding of life)

27) _____ AUTHORITY (the right to lead or command)

28) _____ TRUE FRIENDSHIP (close, supportive friends)

29) _____ A WORLD OF BEAUTY (beauty of nature and the arts)

30) _____ SOCIAL JUSTICE (correcting injustice, care for the weak)

VALUES LIST II

Again, rate how important each of the following values is for youas a guiding principle in YOUR life. **These values are phrased as ways of acting that may be more or less important for you.** Once again, try to distinguish as much as possible between the values by using all the numbers.

Before you begin, read the values in List II, choose the one that is most important to you and rate its importance. Next, choose the value that is most opposed to your values, or if there is no such value choose the value least important to you, and rate it -1, 0, or 1, according to its importance. Then rate the rest of the values.

AS A GUIDING PRINCIPLE IN MY LIFE, this value is:

Opposed to my values	Not important			Important		Very important		Of supreme importance
-1	0	1	2	3	4	5	6	7

31) _____ INDEPENDENT (self-reliant, self-sufficient)

32) _____ MODERATE (avoiding extremes of feeling & action)

33) _____ LOYAL (faithful to my friends, group)

34) _____ AMBITIOUS (hardworking, aspiring)

35) _____ BROADMINDED (tolerant of different ideas and beliefs)

36) _____ HUMBLE (modest, self-effacing)

37) _____ DARING (seeking adventure, risk)

38) _____ PROTECTING THE ENVIRONMENT (preserving nature)

39) _____ INFLUENTIAL (having an impact on people and events)

40) _____ HONORING OF PARENTS AND ELDERS (showing respect)

41) _____ CHOOSING OWN GOALS (selecting own purposes)

42) _____ HEALTHY (not being sick physically or mentally)

43) _____ CAPABLE (competent, effective, efficient)

44) _____ ACCEPTING MY PORTION IN LIFE (submitting to life's circumstances)

45) _____ HONEST (genuine, sincere)

46) _____ PRESERVING MY PUBLIC IMAGE (protecting my "face")

47) _____ OBEDIENT (dutiful, meeting obligations)

48) _____ INTELLIGENT (logical, thinking)

49) _____ HELPFUL (working for the welfare of others)

50) _____ ENJOYING LIFE (enjoying food, sex, leisure, etc.)

51) _____ DEVOUT (holding to religious faith & belief)

52) _____ RESPONSIBLE (dependable, reliable)

53) _____ CURIOUS (interested in everything, exploring)

54) _____ FORGIVING (willing to pardon others)

55) _____ SUCCESSFUL (achieving goals)

56) _____ CLEAN (neat, tidy)

57) _____ SELF-INDULGENT (doing pleasant things)

APPENDIX D

VERBAL CREATIVITY TASKS

Writing Task

Please write a short story with the title **"Glow"**. Please print legibly and take no more than 15 minutes to complete this task.

Writing Task

Please write a short story with the title **"Frame"**. Please print legibly and take no more than 15 minutes to complete this task.

APPENDIX E

VISUAL CREATIVITY TASKS

Drawing Task

Please use a pen or pencil to draw a picture with the title **"Light"**. Please take no more than 15 minutes to complete this task.

Drawing Task

Please use a pen or pencil to draw a picture with the title **"Dream"**. Please take no more than 15 minutes to complete this task.

APPENDIX F

INSTRUCTIONS TO RATERS

Thank you so much for taking the time to rate stories/ drawings. Please keep a few things in mind as you rate the stories:

1. Please briefly look over all the stories/drawings before you begin to rate them, then please rate each one according to the following scale:

1= not at all creative
2= somewhat creative
3= creative
4= very creative
5= extremely creative

2. These stories/drawings were completed by college students. Please rate their creativity in relation to one another, not some other standard.

3. Please try to use the range of the scale as much as possible (don't rate all stories as "creative" or "extremely creative")

4. You may go back to change any of your responses as often as you like.

5. There are 313 short stories/drawings. There is no need to complete the task in one sitting. The entire task should take between 3 and 4 hours at the most.

Thanks,
Christa Taylor

APPENDIX G

CREATIVE MOTIVATION SCALE

Creative Motivation Scale

Please rate each statement (circle), according to the following scale:

1	2	3	4	5	6	7
Completely Disagree	Disagree	Disagree Somewhat	Don't know	Agree somewhat	Agree	Completely agree

1. Being creative is important to me.

1 2 3 4 5 6 7

2. I am driven to be new and different.

1 2 3 4 5 6 7

3. I have no desire to be creative.

1 2 3 4 5 6 7

4. I admire creative people.

1 2 3 4 5 6 7

5. I do not care if I use my imagination.

1 2 3 4 5 6 7

6. I enjoy my creativity.

1 2 3 4 5 6 7

7. I think creative people tend to be weird.

1 2 3 4 5 6 7

8. I want my work to be innovative.

1 2 3 4 5 6 7

9. I have no use for creativity.

1 2 3 4 5 6 7

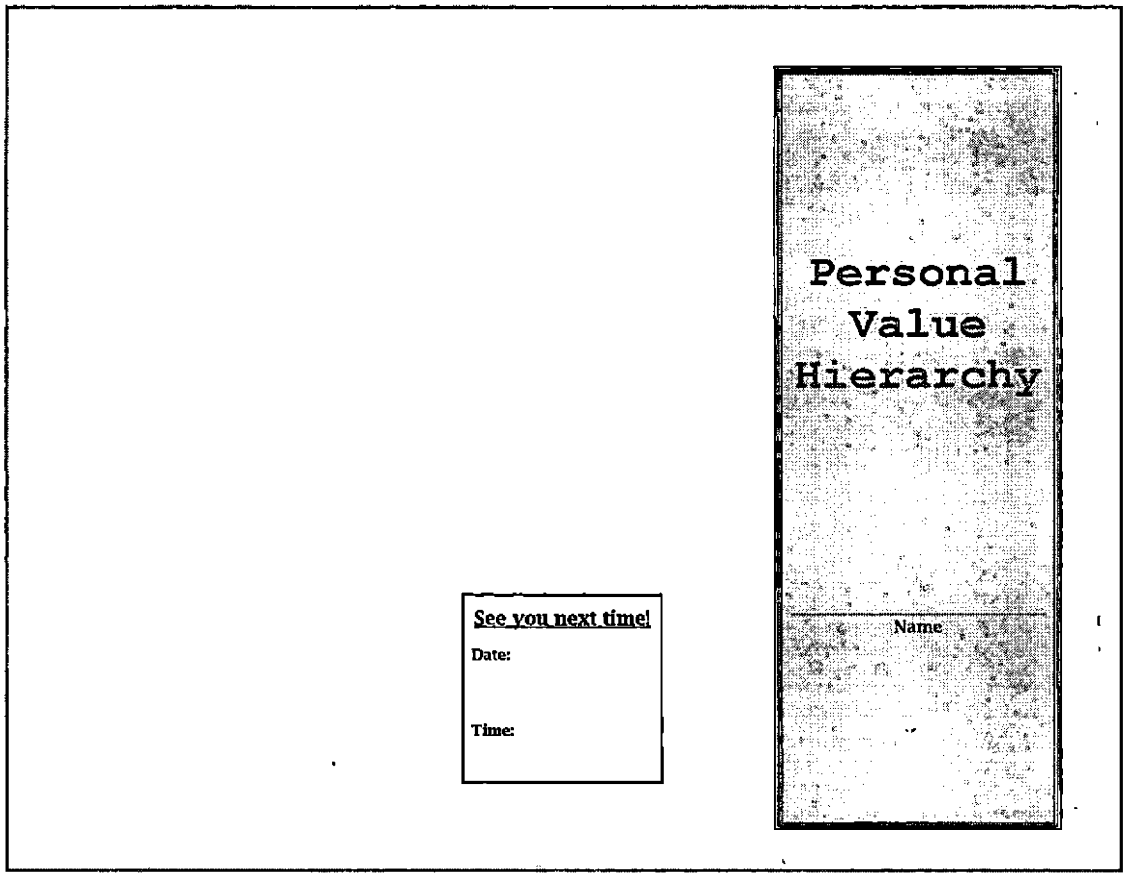
10. I don't see the value of being creative.

1 2 3 4 5 6 7

APPENDIX H

VALUE RATINGS BROCHURE

Exterior



Interior (control)

Core values

Below is a list of 10 core values (in alphabetical order) and the individual value items belonging to the value

Achievement: ambitious; capable; influential; successful; intelligent; self-respect

Benevolence: forgiving; helpful; honest; loyal; responsible; mature love; true friendship

Conformity: honoring parents and elders; obedient; politeness; self-discipline

Hedonism: enjoying life; pleasure; self-indulgent

Power: authority; social power; wealth; preserving my public image; social recognition

Security: clean; family security; national security; reciprocation of favors; social order; healthy; sense of belonging

Self-Direction: choosing own goals; creativity; curious; freedom; independent; self respect

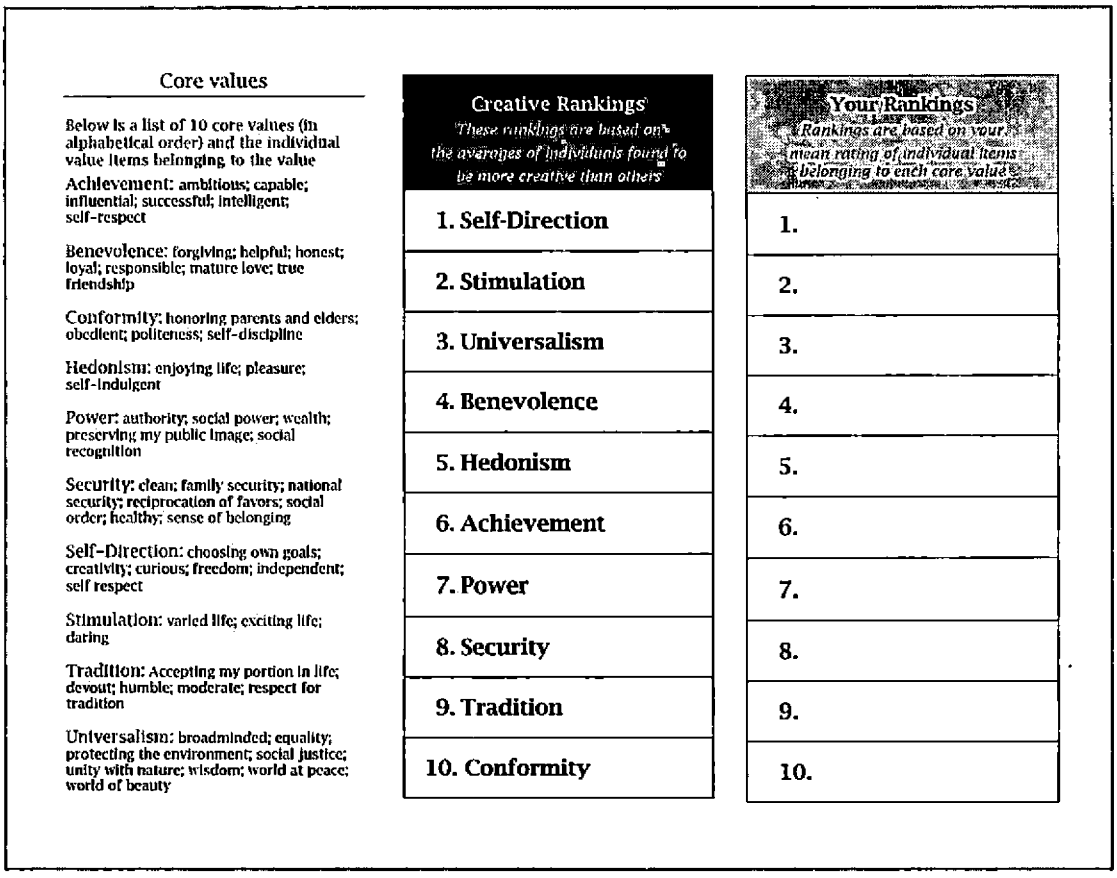
Stimulation: varied life; exciting life; daring

Tradition: Accepting my portion in life; devout; humble; moderate; respect for tradition

Universalism: broadminded; equality; protecting the environment; social justice; unity with nature; wisdom; world at peace; world of beauty

Your Rankings *Rankings are based on your mean rating of individual items belonging to each core value*
1.
2.
3.
4.
5.
6.
7.
8.
9.
10.

Interior (experimental)



Core values

Below is a list of 10 core values (in alphabetical order) and the individual value items belonging to the value

Achievement: ambitious; capable; influential; successful; intelligent; self-respect

Benevolence: forgiving; helpful; honest; loyal; responsible; mature love; true friendship

Conformity: honoring parents and elders; obedient; politeness; self-discipline

Hedonism: enjoying life; pleasure; self-indulgent

Power: authority; social power; wealth; preserving my public image; social recognition

Security: clean; family security; national security; reciprocation of favors; social order; healthy; sense of belonging

Self-Direction: choosing own goals; creativity; curious; freedom; independent; self respect

Stimulation: varied life; exciting life; daring

Tradition: Accepting my portion in life; devout; humble; moderate; respect for tradition

Universalism: broadminded; equality; protecting the environment; social justice; unity with nature; wisdom; world at peace; world of beauty

Creative Rankings *These rankings are based on the averages of individuals found to be more creative than others*	Your Rankings *Rankings are based on your mean rating of individual items belonging to each core value*
1. Self-Direction	1.
2. Stimulation	2.
3. Universalism	3.
4. Benevolence	4.
5. Hedonism	5.
6. Achievement	6.
7. Power	7.
8. Security	8.
9. Tradition	9.
10. Conformity	10.

APPENDIX I

WRITING PROMPT

Please describe possible reasons why you rated your top three values as such. Please refer to the provided list if you would like to reference the single value items belonging to each of these values.

Please describe possible reasons why self-direction, stimulation, and universalism values are important to creative individuals. Please refer to the provided list if you would like to reference the single value items belonging to each of these values.

APPENDIX J

DEBRIEFING STATEMENT

Debriefing Statement

This study is concerned with the effectiveness of a technique, known as value self-confrontation, on changing values and behavior related to creativity.

In this study, you were asked to complete a survey assessing your personal value structure. You were then provided with information regarding your ranking of ten core values. Some participants were also provided with information regarding the value rankings of others, obtained from previous studies.

To ensure the validity of the study we ask that you do not discuss any aspect of this study with anyone.

If you have any questions or concerns, or would like a summary of the results once the study is complete, please contact Christa Taylor at Tayle301@csusb.edu. The anticipated completion date for the study is June 2010.

Thank you for your participation!

APPENDIX K

VERBAL TASK RESPONSE EXAMPLES

Example 1. Frame

Every time I go shopping I like to go to Ross and Marshall's and look at all the pretty frames. I like looking at frames because that represent a symbol of security against the picture.

(Rating 1.14 out of 5)

Example 2. Frame

Lisa sat in her over-sized chair staring blankly out the window. The cushions ballooned around her tiny body like foam around a rock. Her flowered dress hung over the side and her feet were tucked under her bottom. Her head lie tilted on her palm. She was fixated on an object far out in the distance, what it was we cannot be sure. The wind pushed a handful of dry brown leaves past the window, but no tree was visible. The brown of the leaves was reflected in the paint of the drab old walls. Odd shadows danced on the walls as if a roaring fire was keeping her warm, but again, no free place could be seen. Completing the image, bringing this small view of a life to an end, was a thick wooden frame. Ornate carvings of seemingly random geometric shapes twisted and turned on the four pieces. The frame held the image tight, never letting it fade.

(Rating 4.14 out of 5)

Example 3: Glow

When I was little I used to stare up above my room ceiling. Every time I look up I see the glow in stars stickers above me.

(Rating 1 out of 5)

Example 4. Glow

A little girl named Anna was having a terrible morning. Her parents fought over breakfast in the morning, she couldn't find her favorite shirt to wear for picture day. And now she had just missed the bus to school. She began to cry as she walked the three miles to her school because she knew that she would be late
for class.

As she walked along the road she stepped on something sharp that went through her shoe and her foot began to bleed. Defected by the terrible events of the morning she began to think of just walking home and forgetting her day altogether. However, her mothers punishments when she found out would be far worse than a few bad occurrences. So she continued to walk to school. Of course, the sky began to go dark, and now it began to rain on Anna.

Taking shelter under the eaves of someone's house, she could see a blue glow coming from under the front door. Intrigued she began to look under the door, accidentally pushing on it slightly only to discover it opened. She walked inside and called out "hello" to see if someone was home. At hearing no response she began to look around she was curious to see sheerer the blue light was coming from. However, the blue light had disappeared. She walked into the living room and in the hallway discovered the blue light glowing from underneath one of the bedroom doors. Hesitant to open it, she put her ear to the door to see if she could hear anyone. When she heard nothing she began to slowly open the door. When she opened the door, again the blue light disappeared. She suddenly began to feel sleepy so she walked over to the bed and layer down. The blue light shone again as she began to close her eyes and drift to sleep.

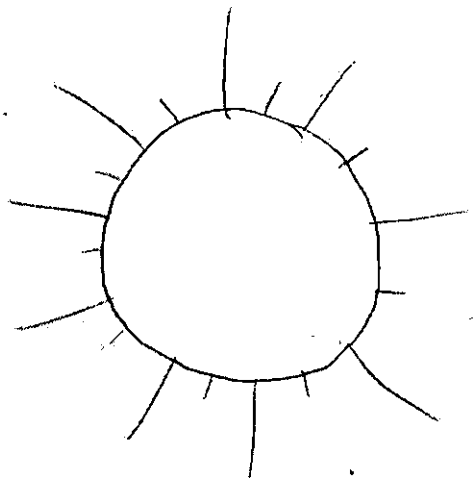
Anna awoke to her mother waken her up. "Where am I?" she replied. She got out of bed and looked around. It was the same day. She had been dreaming. Her mother had layer out her favorite shirt for picture day, and both her parents sat at the kitchen table eating breakfast and talking. Anna looked down at her still aching foot. If it was a dream then why does my foot still hurt?

(Rating 4.43 out of 5)

APPENDIX L

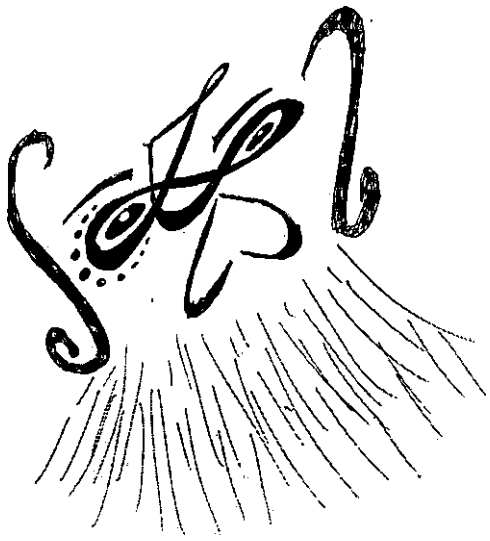
VISUAL TASK RESPONSE EXAMPLES

Example 1. Light



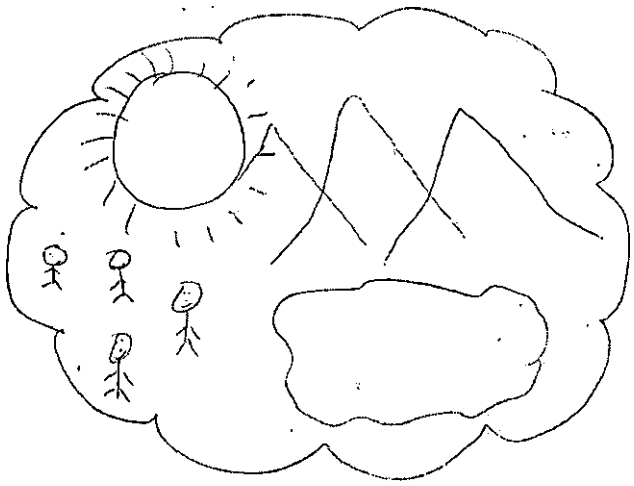
(Rating 1 out of 5)

Example 2. Light



(Rating 3.86 out of 5)

Example 3. Dream



(Rating 1.29 out of 5)

Example 4. Dream

(Rating 3.57 out of 5)

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