Values Across Creative Domains

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Study one was adapted from the first author's master's thesis, conducted at California State University San Bernardino. Thanks to Lauren Skidmore, Amber Lytle, and Karina Villanueva for assisting with data collection, and to Gregory Perez, Arielle White, Tatiana Pumaccahua, Ryan Holt, Lauren Skidmore, Courtney Derosia, Yecica Bernardo, and Justine Short for rating products.

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Abstract

Past research has demonstrated that the hierarchical value structures of creative individuals differ systematically from their less creative counterparts. However, earlier studies used a global creativity score, which is inconsistent with both creativity's movement toward a domain-specific viewpoint, and Lebedeva et al.'s 2019 study suggests the relationship between values and the frequency of creative behaviors differs by domain. We conducted two studies to determine if different creative domains are associated with distinct value hierarchies in creative ability, self-perception, and achievement. Study 1 (*N*=156) examined whether Schwartz's core values demonstrated a different pattern of correlations with verbal versus visual creative performance, assessed with story and drawing tasks. Study 2 (*N*= 492) examined the pattern of values across a broader set of domains (i.e., artistic, everyday/self, science, performance, and scholarly), assessed using measures of creative self-concept and self-reported creative achievement. The value hierarchies associated with each of the domains were not consistent with each other or with the findings of past studies. The implications of these results for creative domain specificity and motivation are discussed.

***Keywords*:** creativity, values, creative domains, domain-specificity

Values across Creative Domains

Creativity, broadly defined as "the interaction among 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), is beneficial to both individuals and society as a whole. Creative individuals are more likely to succeed in school (Gajda, Karwowski, & Beghetto, 2016), be resilient in the face of hardships (Forgeard, 2013; Metzl, 2009), find meaning in life (Kaufman, 2018), and experience career satisfaction and success (Mohamed, Khalifa Al-Shibami, Alrajawi, & Isaac, 2019). CEOs often single out creativity as a crucial ability for both employees and supervisors (IBM Institute for Business Value, 2016), and creativity is seen as one of the primary drivers of the economy (Florida, 2014). Given the recognition of creativity as an asset, why do some people choose to pursue creative activities whereas others do not? One explanation may be differences in personal values (Dollinger, et al, 2007; Kasof, Chen, Himsel, & Greenberger, 2007).

Schwartz (1992) defined values as "desirable, transituational goals, varying in importance, that serve as guiding principles in people's lives" (2003, p. 267). He established a theory based on 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), which correlate highly with one another. The core values have a dynamic relationship, wherein each core value shares underlying motivations with some values and conflicting motivations with others (Schwartz & Boehnke, 2004). 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. conservation. The self-enhancement (power and achievement) vs. self-transcendence

(benevolence and universalism) dimension shows the conflict between serving one's own self-interests and serving the interests 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.

Being willing to defy the crowd (e.g., Sternberg & Lubart, 1995) means taking risks and specifically deciding to be creative (Sternberg, 2002). If someone sees creativity as being of value and has the self-confidence to pursue such endeavors, then they are more likely to take specific creative action (Karwowski & Beghetto, 2019; Karwowski et al., 2019). Before such actions are taken – before one feels intrinsically motivated to be creative (Hennessey, 2019), one must value creativity to feel the need to pursue creative activities (Luria & Kaufman, 2017).

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. In contrast, an individual who values security highly may seek ways to maintain social order, such as serving in a neighborhood watch group. Behaviors may also express multiple values; 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), and religiosity (Roccas, 2005). Sagiv (2002) demonstrated a strong link between values and occupational choice, reporting significant correlations between Schwartz's core values and Holland's (1985) six vocational interest types. For instance, universalism and self-direction values were positively correlated with artistic and investigative interests, whereas achievement and power values were positively correlated with

enterprising interests. This value-behavior link has also been found in relation to creative behavior (Dollinger, Burke, & Gump, 2007; Kasof et al., 2007).

Although research in this area has been limited, studies have demonstrated that the hierarchical value structures of creative individuals differ systematically from their less creative counterparts (Dollinger, et al, 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 tasks rated for creativity (both verbal and visual) 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 with high verbal, artistic, and mathematic creativity were more likely to value self-direction, stimulation, and universalism and less likely to value tradition, conformity, and security. Although multiple domains of creativity were assessed in each of the studies, both studies combined creativity scores across different domains of performance (such as drawing and poetry) to create a single creativity score (Dollinger et al., 2007; Kasof et al., 2007). This bypasses the question of whether creativity is best captured by a single, general score or with many scores reflecting different domains.

One recent study examined how values relate to the frequency with which people engage in different domains of creative activities, demonstrating that value hierarchies differ for distinct domains of creativity (Lebedeva, Schwartz, van de Vijver, Plucker, & Bushina, 2019). Associations between values and global creativity (i.e., total scale scores on a revised version of the Creative Behavior Inventory; Dollinger, 2003) were similar to the value hierarchy found in previous studies, wherein self-direction and stimulation were the top two values. However, the value hierarchies differed somewhat across each of the individual creative domains assessed by

the scale (crafts, visual arts, performance, theatre, workplace products, and machine graphics) and between samples in Central Russia and the North Caucasus. For instance, although self-direction was consistently among the top three values for all domains for both groups, achievement was among the top three values for visual arts in the Central Russian sample only. However, the Creative Behavior Inventory has traditionally been used as a domain-general instrument (Silvia, Wigert, Reiter-Palmon, & Kaufman, 2012). Although the researchers did adapt the scale to tap into distinct domains, all but one of the domains (workplace products) were broadly in the arts. Although this emphasis on the arts is consistent with layperson beliefs (Glăveanu, 2014), it does not reflect the wide variety of domains that are the subject of creativity scholarship (e.g., Kaufman, Glăveanu, & Baer, 2017). Thus, although Lebedeva et al. (2019) greatly extended our knowledge about creativity and values, they did not address the full extent to which creative domains may differ.

The degree to which creativity is domain-general or domain-specific was once the subject of debate (e.g., Baer, 1998; Plucker, 1998). In more recent years, there has been extensive research on the topic that have led to more nuanced theoretical approaches. Several studies point strongly to domain-specificity. For example, Dow and Mayer (2004) found that people who received problem solving training in one domain only showed increased creativity in that same domain; in other words, the training did not generalize. Comparable results have been found using divergent thinking across different problems (Runco, Dow & Smith, 2006). There have also been many studies on rated creative products across different domains showing little to no relationship (see overview in Baer, 2015). In contrast, studies that have used item response theory have found more support for domain-generality (Qian & Plucker, 2018; Qian, Plucker, & Yang, 2019), albeit with accompanying evidence of domain-specificity still being important.

Such results, consistent with Plucker's (1999, 2004) assertion that the method of measuring creativity makes an important difference in whether it is general or specific, have led to theories that argue both domain-specific and domain-general attributes are crucial to understanding creativity.

We will highlight one theory, the Amusement Park Theoretical model of creativity (APT; Baer & Kaufman, 2005, 2017), but it is important to note there are many other theories, such as the hybrid theory (Plucker & Beghetto, 2004), which offer similar views of the interaction of the domain-specific and domain-general approach. The APT model posits that whereas there are general requirements for all creative behavior (such as intelligence, motivation, and environment), creative outcomes require domain-relevant skills and characteristics. 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 APT suggests that factors related to creativity (such as values and motivation) may relate to different domains of creativity in distinct ways (Kaufman, 2012).

Indeed, several studies have found systematic differences in the way different factors relate to distinct creative domains. For example, domain-relevant knowledge was a better

predictor of creativity in math than divergent thinking, whereas divergent-thinking was a better predictor, than domain-relevant knowledge, of artistic creativity (Jeon, Moon, & French, 2011). In a different study, creativity-relevant skills and processes (such as assuredness and striving) related to creativity in problem-solving, art, and writing in differential ways (Ruscio, Whitney, & Amabile, 1998). For example, striving was found to be a significant predictor of verbal creativity, but was not found to significantly predict visual creativity or divergent thinking.

Reflecting a more domain-specific viewpoint, consistent with an overall trend with how creativity is presented in overviews of the field (e.g., Kaufman, 2016), we conducted two exploratory studies to determine if different creative domains are associated with distinct value hierarchies. Study 1 examines whether Schwartz's core values demonstrate a different pattern of correlations with verbal versus visual creative performance, assessed using story and drawing tasks. Study 2 uses a less abstract measure of the core values, the Portrait Values Questionnaire (PVQ; Schwartz et al, 2001), to examine the pattern of values across a broader set of domains, assessed using measures of creative self-concept and self-reported creative achievement.

Study 1

Method

Participants

Participants for the study consisted of 163 students attending a state university in the Southwestern United States. Data from participants who used the same scale anchor more than 35 times on the values survey (*N*=8) were excluded from analyses, leaving 156 participants (17 male, 139 female). Participants ranged from 18 to 57 years of age (M = 23.83, SD = 6.48). The ethnicity of participants was distributed as follows: 39.7% Hispanic, 26.3% Caucasian, 3.5% African American, 11.5% mixed ethnicity, 6.4% Asian, and 2.5% other.

Materials

Schwartz Values Survey. The Schwartz Values Survey (SVS) 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 and visual creativity tasks were adapted from Kaufman, Baer, and Cole (2009) and Kasof et al. (2007), respectively. Verbal and visual tasks consisted of providing participants with one of two titles: frame or glow (verbal) and dream or light (visual). Participants were instructed to take no more than 15 minutes to write a short story (verbal) or draw a picture (visual) based on the title provided. The title of the tasks and order of the task type were randomly distributed.

Creativity tasks were evaluated using the Consensual Assessment Technique (CAT; Amabile, 1996), following the procedures outlined by Hennessey and Amabile (1999; see also Kaufman, Plucker, & Baer, 2008). 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 five quasi-experts; past research has found that quasi-experts agree strongly with experts when rating creative products (Kaufman & Baer, 2012; Kaufman,

Baer, Cropley, Reiter-Palmon, & Sinnett, 2013). Inter-rater reliability for creativity scores was assessed using Cronbach's alpha coefficient. Inter-rater reliabilities for visual creativity (α =.77) and verbal creativity (α =.79) were acceptable (Nunnally & Bernstein, 1994).

Procedure

Participants were tested individually in the lab. A survey packet containing informed consent, a demographic survey, and the Schwartz Values Survey (SVS) was distributed by the experimenter. Upon completing and returning the materials to the experimenter, participants were given a small packet containing the verbal creativity task, visual creativity task, and a short creative motivation scale (for use in a different study; see Redacted for blind review), presented in a random order. Once all materials were received by the experimenter, additional procedures were followed that were not relevant to the current study. Following completion of all procedures, participants were debriefed and thanked for their time.

Results

Scores on the verbal and visual creative tasks were not significantly correlated with one another (r= .12, p= .13). However, an average score was created to determine if the hierarchical structure of values for a composite score would differ from that of domain specific scores and be consistent with previous studies. Descriptive statistics may be seen in Table 2.

Creative tasks and values were analyzed to determine if the hierarchy of values associated with performance on the verbal and visual creativity tasks, as well as the average of these scores, was consistent with past studies and with one another. We report Spearman correlation coefficients and p-values for associations between select individual values and creativity for comparison with past studies and to illustrate salient differences in value hierarchies. However, Schwartz (1996) argued that it is the value structure as an integrated whole

that guides behavior, rather than the importance of any individual value. Therefore, we focus our interpretation on how creativity relates to the hierarchical structure of the ten values as a whole. The hierarchical value structures are created by rank ordering the individual-level correlations between creativity and values. How strongly value hierarchies in different creative domains are related to one another can be determined by testing the rank-order correlation using Spearman's rho, similar to testing the association between predicted and observed value hierarchies conducted in previous studies (see Dollinger, 2007; Kasof et al., 2007; Sagiv & Schartz, 1995).[1]

Testing associations between the value hierarchies at the aggregated level enabled us to directly test how strongly the value hierarchies in our study relate to those found in past studies that used global creativity scores. Spearman's rho for the value hierarchy of averaged creativity in the present study and those reported by Dollinger et al. (2007) and Kasof et al. (2007) were strong (r = .86 - .93). Additionally, the top three values with the largest magnitude of individual-level correlations in the averaged value hierarchy mirrored those found in previous studies: self-direction (r= .34, p< .05), stimulation (r= .17, p< .05), and universalism (though not significantly; r= .15, p= .07). However, the value hierarchies for visual and verbal creativity were not entirely consistent with past studies or with one another. The value hierarchy for visual creativity was only weakly related to the value hierarchy for verbal creativity (r = .24, p = .51). As seen in Table 3, two of the three expected values had the greatest magnitude of individual-

[1] Using this method, value hierarchies are tested at the aggregate level, resulting in N = 10. If value structures are roughly equivalent, they should demonstrate a large positive effect (i.e., .80), requiring N = 8 for a one-tailed test with 80% power and α = .05 (according to a power analysis using G*Power 3.1; Faul, Erdfelder, Buchner, & Lang, 2009). However, given the exploratory nature of these analyses, we do not report p-values and instead examine the strength of the associations.

level correlations with both visual and verbal creativity: The two values with the highest individual-level correlations with visual creativity were self-direction (r= .27, p< .05) and stimulation (r= .17, p< .05), whereas the two values with the highest individual-level correlations with verbal creativity were self-direction (r= .21, p< .05) and universalism (though not significantly; r= .14, p= .09). However, the third highest ranked correlation for visual creativity was conformity (r= .10, p= .23) and the third highest ranked correlation for verbal creativity was hedonism (r= .12, p= .16), although neither reached significance.

Examining the set of two broader dimensions of values demonstrates similar patterns for correlations with verbal and visual creativity. Because these values oppose one another on each dimension (e.g., openness and conservation are at opposing ends of one dimension), it is the conflict between the opposing values that guides behavior (Schwartz, 1996). Thus, it is the relative ranking of values for each dimension, rather than significance of the coefficient for individual values that provides insight into the motivations underlying each. Verbal creativity was associated with the positive endorsement of openness (r= .20, p< .05) to a greater extent than conservation (r= -.24, p< .05) and self-transcendence (r= .06, p= .49) to a greater extent than self-enhancement (r= .03, p= .71). Visual creativity demonstrated a similar pattern, being associated with positively endorsing openness (r= .26, p< .05) more so than conservation, (r= -.01, p= .91) and self-transcendence (r= .06, p= .43) more so than self-enhancement (r= -.18, p< .05).

Discussion

Study 1 sought to determine if, in accordance with domain-specific views of creativity, different patterns of associated values for verbal and visual creativity would be supported. Indeed, creativity scores on verbal (i.e., short story writing) and visual (i.e., drawing) tasks were

associated with distinct value hierarchies. The averaged creativity value hierarchy (values ranked by magnitude of correlation with the mean of scores for verbal and visual creative performance) was largely consistent with the value hierarchies found in past studies (Dollinger, et al, 2007; Kasof et al., 2007), with stimulation, self-direction, and universalism as the highest ranked values. However, the value hierarchies for verbal and visual creativity were only weakly associated with one another, demonstrating different patterns of values. For instance, *conformity* ranked in the top three values associated with visual creativity, whereas *hedonism* ranked in the top three values associated with verbal creativity. This finding demonstrates that combining the scores of different types of creativity tasks may lead to faulty conclusions.

However, there are several limitations in Study 1 that should be addressed. First, creative writing and drawing would both be categorized under the broad umbrella of the arts (as opposed to, say, sciences). The value hierarchies of associated with creative domains from different fields may vary more from those from similar fields. Given the exploratory nature of the study, we have no hypotheses regarding the exact hierarchical structure of values for different domains. However, there are reasons to anticipate potential differences. Some personality factors (such as conscientiousness; Feist, 1998) and personality facets (such as openness to experience and openness to intellect; Kaufman, 2013) show specifically different relationships with creativity in different domains. In addition, based on these results and the theoretical structure of the APT model, we do suspect that value hierarchies in domains related to the arts will resemble those in the first study and that value hierarchies for domains from the same general thematic area (e.g., within arts or sciences) will be more similar than those from distinct thematic areas.

Second, although performance on creative tasks is in many instances the ideal indicator of creativity, other indicators (such as self-concept and accomplishment) may provide

enlightening information (Kaufman, 2019). Given that values underlie motivational goals, understanding how they relate to how creative one believes they are versus ones' level of creative accomplishment would provide insight into what moves a person from creative potential to creative accomplishment. Creative self-concept in a given domain reflects having engaged in- and felt a certain level of personal success in-that or similar domains (Tierney & Farmer, 2002), whereas creative accomplishment reflects a greater level of participation in a given domain, which may or may not be driven by unique motivational factors. Finally, the measure used to assess values, the Schwartz Values Survey, is abstract and context-free, which may make it unsuitable for some samples (Schwartz, Melech, Lehmann, Burgess, Harris, & Owens, 2001). Each of these issues was addressed in a second study, using a much larger sample.

Study 2

Method

Participants

A total of 561 students, recruited via the online recruitment system at the same university as in Study 1, completed the materials online. Two participants did not provide responses for more than 15 scale items and 82 participants used the same scale anchor for more than 25 of the items on the PVQ. Additionally, four participants did not complete the creativity measures. Therefore, these participants were excluded from analyses.

The resulting sample consisted of 492 individuals (male= 70, female= 422) aged 18 to 64 (M= 23.72, SD= 7.01). The ethnicity of participants was distributed as follows: 48.4% Hispanic, 27.2% Caucasian, 10.6% African American, 6.9% Asian, 4.7% mixed Ethnicity, and 2.2% other or decline to answer. Those enrolled in select undergraduate psychology courses received extra credit for their participation. All others received no compensation.

Materials

Portrait Values Questionnaire. The Portrait Values Questionnaire (PVQ; Schwartz et al, 2001) contains 40 short portraits of individuals, gender-matched to the participant. Each of the portraits is implicitly linked to one of the core values (with 3-6 items assessing each value). For example, the item *"It is important to him to be rich. He wants to have a lot of money and expensive things,"* refers to an individual's value of power. The respondent is asked to compare each portrait to themselves and to answer the prompt, *"How much like you is this person?"* on a 6-point Likert scale, from 1 (*not like me at all*) to 6 (*very much like me*). Scores are centered on the respondents mean scale rating, in order to account for individual differences in scale use. The scores of the portrait-items belonging to each core value are then averaged to yield the ten core value scores.

Kaufman Domains of Creativity Scale. The Kaufman Domains of Creativity Scale (K-DOCS; Kaufman, 2012) assesses an individual's perceptions of their own creativity in five domains: everyday, scholarly, performance (including writing and music), scientific, and artistic. The scale contains 50-items presenting behaviors related to creativity in each of the five domains, such as *finding something fun to do when I have no money* (everyday/self) or *sketching a person or object* (artistic). Respondents are asked to indicate how creative they think they are on each behavior (in comparison to others of the same age and experience) on a 5-point Likert scale, ranging from 1 (*much less creative)* to 5 (*much more creative*). The scores for each subscale are obtained by averaging the scores assigned to the corresponding items for each domain. The K-DOCS has shown convergent and discriminant validity (McKay, Karwowski, & Kaufman, 2017).

Creative Achievement Questionnaire. The Creative Achievement Questionnaire (CAQ;

Carson, Peterson, & Higgins, 2005) is a self-report checklist of creative accomplishment across ten domains: visual arts, music, dance, architectural design, creative writing, humor, inventions, scientific discovery, theatre and film, and culinary arts. Each domain contains a list of seven levels of accomplishment (with the weight of points increasing at each level), from 1 (I have no training or recognized talent in this area) to 7 (which usually includes some form of national recognition, such as "My work has been critiqued in a national publication"). Respondents are asked to place a check mark next to statements which apply to them, as well as write in the number of times that certain specified statements apply to them. All points assigned to the items within a domain are summed to obtain each domain score. Three higher order factors may be obtained by summing the associated domains, resulting in expressive (comprised of visual art, creative writing, and humor), performance (dance, theatre/film, and music), and scientific (inventions, scientific, and culinary arts) dimensions.

Procedure

All data was obtained online using Qualtrics Survey Software. Participants completed informed consent, the Portrait Values Questionnaire (PVQ; Schwartz et al, 2001), Kaufman Domains of Creativity Scale (K-DOCS; Kaufman, 2012), Creative Accomplishment Questionnaire (CAQ; Carson, Peterson, & Higgins, 2005), and several scales assessing creative motivation (for use in a different study), and a demographic questionnaire. The order in which the participants completed the surveys was randomized, with the exception of the PVQ, which was always administered first. Participants were then provided with a debriefing form and thanked for their participation.

Results

Descriptive statistics and correlations between the creativity measures in Study 2 may be seen in Table 4. Independent samples *t*-tests did not reveal statistically significant gender differences for any of the outcomes using the Bonferroni corrected alpha (.05/22 = .002).[2]

Value hierarchies were created by rank ordering the correlations between the core values of the PVQ and scores on each of the creative domains on the K-DOCS, and analyzed to determine if the hierarchical structure of values was consistent across domains. As seen in Table 5, associations amongst the value hierarchies for different creative domains ranged from moderate and negative to strong and positive. The values hierarchy for K-DOCS scientific was weakly associated with that for K-DOCS artistic (r = .23), and thus is not consistent with a global value hierarchy for creativity. The difference between these two value hierarchies may be illustrated by examining the top three values of each (i.e., the three values with the strongest positive individual-level correlations with creativity in each domain). Similarly to past studies, the three values with the largest magnitude of individual-level correlations with KDOCS artistic scores were self-direction (r= .13, p< .05), stimulation, (r= .13, p< .05), and universalism, (r= .10, p< .05); for KDOCS scientific, these three values were power (r= .14, p< .05), stimulation (r= .10, p< .05), and tradition (though not significant; r= .05, p= .31). However, the values hierarchy for K-DOCS scientific was strongly, positively correlated with that for K-DOCS performance (r = .81), the top three values of which were stimulation (r= .15, p< .05), power

[2] There was no reason to expect gender differences in the way that value hierarchies relate to creativity, but the large ratio of women to men in both studies made the possibility of gender differences salient. Although we could be reasonably sure that these results are accurate for women, gender differences on the measures of interest would have increased the uncertainty of how generalizable these results are for men.

(r= .14, p< .05), and achievement (r= .08, p = .07). Thus, although the value hierarchies differed across domains, they did not appear to do so consistently with different general thematic areas (e.g., arts vs. sciences). Value hierarchies, creating by ranking the individual-level correlations between core values and K-DOCS domains, may be seen in Table 6.

Value hierarchies created by rank-ordering the individual-level correlations between the core values of the PVQ and higher order factors of the CAQ (Table 7) were examined to determine if differences exist between creative self-belief and creative achievement. The associations among the value hierarchies for the K-DOCS and CAQ may be seen in Table 5. Of note, the dimensions of the CAQ do not correspond perfectly with the domains on the K-DOCS. However, some of the value hierarchies related to creative self-belief (i.e., K-DOCS) were associated with the value hierarchies for creative achievement (i.e., CAQ) in the corresponding domain. For example, the value hierarchy for K-DOCS performance was strongly, positively associated with that for CAQ performance (r = .88). However, other associations demonstrated that value hierarchies may relate to creative self-belief and creative achievement in different ways within the same domain or similar ways in different domains. For instance, the value hierarchies for K-DOCS scientific and CAQ scientific are only weakly related (r = .16). Additionally, the value hierarchy for K-DOCS artistic is strongly, positively associated with the value hierarchy for CAQ scientific (r = .84), suggesting that the value priorities underlying one's belief regarding how artistically creative they are also underlies creative achievement in the sciences.

Although all five domains of the K-DOCS and the three higher order factors of the CAQ were related to endorsing the broader value of openness more so than conservation, there were differences between the domains in the dimension of self-transcendence vs. self-enhancement

(Table 8). Consistent with Study 1, scores for artistic creativity on the K-DOCS, as well as for everyday/self and scholarly creativity, were associated with a greater positive endorsement of self-transcendence (as opposed to self-enhancement). However, scores for the science and performance domains were associated with a greater positive endorsement of self-enhancement (as opposed to self-transcendence). On the CAQ, scores on the expression and performance factors were associated with a greater positive endorsement of the self-enhancement (as opposed to self-transcendence) dimension, whereas scores on the scientific factor were associated with a greater positive endorsement of self-transcendence.

Discussion

Study 2 was conducted to resolve lingering questions from the first study. There were two primary goals. The first goal was to determine if the value hierarchies for domains from different general thematic areas (e.g., arts versus science) would vary more from one another than those found for Study 1 and in past studies, which focused almost exclusively on the arts. The second goal was to determine if value hierarchies differ when assessing creative self-concept versus creative achievement. Indeed, several of the value hierarchies did differ both across domains and between measures of creative self-concept (i.e., how creative people believe they are compared to their peers) and self-reported creative achievement.

Although the value hierarchies for different creative domains varied, the pattern of associations was not consistent with a thematic area type of organization. The value hierarchies for scholarly, everyday, and artistic creativity on the K-DOCS were moderately to strongly, positively correlated with one another. Again, the top three values in the hierarchy for artistic creativity on the K-DOCS were identical to the averaged hierarchy (i.e., average of writing and drawing tasks) in Study 1 and the values hierarchies found in previous studies that averaged

scores to create a global creativity score (Dollinger, et al, 2007; Kasof et al., 2007). The value hierarchy for K-DOCS scientific was only weakly associated with that for K-DOCS artistic, yet was strongly, positively associated with the value hierarchy for K-DOCS performance. Although our focus is on the value hierarchies as an integrated whole, it is noteworthy that the highest-ranking value for scientific creativity on the K-DOCS was power. The power value has not been featured prominently in previous studies focused on the arts or in the arts-related value hierarchies in the current study. The power value was also prominent (rated second) in the value hierarchy for performance assessed by both the K-DOCS and CAQ.

Associations between value hierarchies for creative self-concept and achievement within domains also varied in unpredictable ways. For example, the values hierarchy for the scientific dimension on the CAQ was strongly associated with the hierarchy for scholarly (opposed to scientific) creativity on the K-DOCS. This may be due to a combination of the sample, as respondents were recruited primarily from psychology programs, and differences in the level of description for science on the CAQ and K-DOCS. Although the K-DOCS provides specific examples of creativity in the domain of science (e.g., “Taking apart machines and figuring out how they work” and “Helping to carry out or design a scientific experiment”), the CAQ simply asks participants to indicate their level of accomplishment in science. It is possible that many respondents in the sample responded on the CAQ in regards to their own science (i.e., psychology), which more closely resembles more of the tasks in the scholarly domain on the K-DOCS (e.g., “Gathering the best possible assortment of articles or papers to support a specific point of view” and “Figuring out how to integrate critiques and suggestions while revising a work.”). It may also simply be due to the fact that the scientific dimension on the CAQ is comprised of science, inventions, and culinary arts. Similarly, the CAQ dimension for expression

does not relate directly to any one domain of the K-DOCS. It is comprised of visual art (which is consistent with the artistic domain on the K-DOCS), along with creative writing and humor (which is consistent with the performance domain on the K-DOCS). However, this may also reflect genuine differences in the value priorities associated with creative self-belief versus creative achievement within the same domain. In the same vein, strong associations between dissimilar K-DOCS domains and CAQ domains (such as the strong association between K-DOCS artistic and CAQ scientific) may point to similar value hierarchies functioning differently for different indicators or creativity.

General Discussion

The present investigation sought to determine if the hierarchical structure of values associated with creativity differs by creative domain. The value hierarchies for the different domains assessed were not consistent with either past studies or with each other in predictable ways. This finding suggests that collapsing the creative scores of different types of tasks into one general creativity quotient may be erroneous and yield results that primarily reflect artistic creativity. Thus, we would argue this practice should be avoided in future values studies. The question of whether values relate to creativity in different domains in distinct ways has important implications for whether creativity is domain general or domain specific (Baer & Kaufman, 2005). Our results support domain-specificity, but also align with models that integrate the opposing views (Kaufman & Baer, 2004; Plucker & Beghetto, 2004).

Although the exploratory nature of the current study allows for only a speculative interpretation of the value hierarchies, there are several key issues that can be gleaned from these results. The artistic value hierarchies most closely resembles those found in past studies. This confirms that the correlations between the value hierarchies and creative tasks in past studies

may have been disproportionately influenced by the participants' ability or perception of their ability in artistic creativity. Such a pattern is unsurprising given that most of the tasks in these studies were related to artistic creativity.

Given the role of values in guiding everyday behavior (Bardi & Schwartz, 2003), disparate value hierarchies suggest that different motivating factors may exist for distinct types of creativity. For instance, whereas an individual high in artistic creativity may be most motivated by autonomy (and therefore rate the self-direction value highly), a creative individual in the sciences may be more motivated by the possibility of achieving high social standing (and therefore rate the power value highly). Indeed, Feist's (1998) meta-analysis on the relationship between personality and creativity demonstrated that although creative artists and scientists shared many of the dispositions measured by the five factor model (FFM; McCrae & John, 1992), a non-conforming disposition was unique to artists and a dominant disposition was unique to scientists. Similarly, Silvia, Kaufman, Reiter-Palmon, and Wigert (2011) found that higher self-reported creative scientific achievements were associated with lower levels of humility.

All of the creative domains in both studies were associated with endorsing openness to change (i.e., following one's own direction) to a greater extent than conservation (i.e., following societal norms). This finding is unsurprising given the consistent relationship found between creativity and openness across different measures and domains (Feist, Reiter-Palmon, & Kaufman, 2017). But why do the domains differ in the extent to which they are associated with self-enhancement (i.e., serving one's own self-interest) and self-transcendence (i.e., serving the interest of others)? Some of the answers may lie in what leads people to engage in specific creative activities.

The performance domain (for both self-rated creativity and self-reported creative achievement) had the most reversed pattern, generally valuing self-enhancement over self-transcendence. The nature of performing attracts specific types of people. Professional and amateur actors, for example, are notably high in extraversion (Goodman & Kaufman, 2014; Nettle, 2006; Silvia, Kaufman, & Pretz, 2009). There are some narcissistic tendencies found in actors, particularly in that they strongly seek out admiration (Dufney et al, 2015). In another study of celebrities from the performing world (reality television stars, actors, musicians, and comedians), celebrities were notably more narcissistic (with particularly high exhibitionist scores) than a group of MBA students (Young & Pinsky, 2006). Placed in this context, it makes sense that people who are drawn to be creative in different domains would show different types of values. If performers are more likely than other creators to be extraverted and narcissistic, it is consistent that they would be more likely to value self-enhancement over self-transcendence.

The current study has several limitations, which should be addressed in future research. One important limitation of the current study is that our sample included a rather small percentage of male participants; future studies should attempt to include a more gender balanced sample. Our studies also relied on students at one university; future studies should attempt to include more diverse subject populations. The measure of creative achievement in the second study used relied on self-report. Although many researchers remain skeptical of such assessments, there is evidence that these types of measures may be more useful than previously thought (Silvia et al, 2012). Silvia et al. analyzed several recently developed self-report scales of creativity (including a precursor to the K-DOCS used here) and found that each of the scales demonstrated good reliability and validity (at least with each other). Still, it may be of interest to use objective measures of creative accomplishment in future studies. Future research may also

benefit from including measures of creative performance from general thematic areas that have been underexplored, such as STEM areas, given that our measures of creative performance were in the arts. Many of the effect sizes for individual core values tended to be small, and because our focus was on the value hierarchies as a whole, we limited our interpretation of individual core values.

Despite these limitations, the current study adds to our limited understanding of how values relate to creativity by exploring how personal values impact creative self-concept, accomplishment, and performance in distinct domains. It is particularly notable that many non-artistic domains do not show the same patterns found in past studies of values and creativity. Extending conceptions of creativity beyond the arts is an important step to understanding the full scope of the relationship between creativity and values.

References

Amabile, T. M. (1996). *Creativity in context: Update to the social psychology of creativity*. Boulder, CO: Westview.

Baer, J. (1998). The case for domain specificity of creativity. Creativity Research Journal, 11 (2), 173-177.

Baer, J. (2015). *Domain specificity in creativity.* San Diego: Academic Press.

Baer, J., & Kaufman, J. C. (2005). Bridging generality and specificity: The amusement park theoretical (APT) model of creativity. *Roeper Review, 27,* 158–163.

Baer, J., & Kaufman, J. C. (2017). The Amusement Park Theoretical Model of Creativity: An attempt to bridge the domain specificity/generality gap. In J. C. Kaufman, V. P. Glăveanu, & J. Baer (Eds.), *Cambridge handbook of creativity across domains* (pp. 8-17). New York: Cambridge University Press.

Bardi, A., & Schwartz, S. H. (2003). Values and behavior: Strength and structure of relations. Personality and Social Psychology Bulletin, 29, 1207-1220.

Barnea, M. F., & Schwartz, S. H. (1998). Values and voting. *Political Psychology,* 19 (1), 17-40.

Bond, M. H., & Chi, V. (1997) Values and moral behavior in mainland china. *Psychologia: An International Journal of Psychology in the Orient, 40* (4), 251-264.

Carson, S. H., Peterson, J. B., & Higgins, D. M. (2005). Reliability, validity, and factor structure of the Creative Achievement Questionnaire. *Creativity Research Journal, 14* (1), 37–50.

Dollinger, S. J. (2003). Need for uniqueness, need for cognition, and creativity. *Journal of Creative Behavior, 37*, 99–116.

Dollinger, S. J., Burke, P. A., & Gump, N. W. (2007). Creativity and values. *Creativity Research Journal, 19* (2-3), 91-103.

Dow, G. T., & Mayer, R. E. (2004). Teaching students to solve insight problems: Evidence for domain specificity in creativity training. *Creativity Research Journal, 16*, 389-402.

Dufner, M., Egloff, B., Hausmann, C. M., Wendland, L. M., Neyer, F. J., & Back, M. D. (2015). Narcissistic tendencies among actors: Craving for admiration, but not at the cost of others. *Social Psychological and Personality Science*, *6*(4), 447-454.

Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods, 41*(4), 1149–60.

Feist, G. J. (1998). A meta-analysis of personality in scientific and artistic creativity. *Personality and Social Psychology Review, 2* (4), 290–309.

Feist, G. J., Reiter-Palmon, R., & Kaufman, J. C. (Eds.) (2017). *Cambridge handbook of creativity and personality research*. New York: Cambridge University Press.

Florida, R. (2014). *The rise of the creative class–revisited: Revised and expanded.* New York: Basic Books.

Forgeard, M. J. C. (2013). Perceiving benefits after adversity: The relationship between self-reported posttraumatic growth and creativity. *Psychology of Aesthetics, Creativity, and the Arts, 7*, 245-264.

Gajda, A., Karwowski, M., & Beghetto, R. A. (2017). Creativity and academic achievement: A meta-analysis. *Journal of Educational Psychology*, *109*, 269-299.

Glăveanu, V. P. (2014). Revisiting the “art bias” in lay conceptions of creativity. *Creativity Research Journal*, *26*(1), 11-20.

Goodman, G., & Kaufman, J. C. (2014). Gremlins in my head: Predicting stage fright in elite actors. *Empirical Studies of the Arts*, *32,* 133-148.

Hennessey, B. A. (2019). Motivation and creativity. In J. C. Kaufman & R. J. Sternberg (Eds.), *Cambridge Handbook of Creativity (2nd Ed)* (pp. 374-395). New York: Cambridge University Press.

Hennessey, B. A., & Amabile, T. M. (1999). Consensual assessment. In Runco, M. A. & Pritzker, S. R. (Eds.) Encyclopedia of Creativity (pp. 347-359). San Diego: Academic Press.

Hocevar, D. (1979). *The development of the Creative Behavior Inventory*. Paper presented at the annual meeting of the Rocky Mountain Psychological Association, Las Vegas, NV.

Holland, J. L. (1985). *Making vocational choice: A theory of careers*. Englewood Cliffs, NJ: Prentice Hall.

IBM Institute for Business Value (2016). *Redefining competition: Insights from the Global C-suite Study – the CEO perspective.* Somers, NY: IBM Global Business Services.

Jeon, K.-N., Moon, S. M., & French, B. (2011). Differential effects of divergent thinking, domain knowledge, and interest on creative performance in art and math. *Creativity Research Journal, 23,* 60–71.

Karwowski, M., Beghetto, R. A. (2019). Creative behavior as agentic action. *Psychology of Aesthetics, Creativity, and the Arts, 13,* 402-415.

Karwowski, M., Lebuda, I., & Beghetto, R. A. (2019). Creative self-beliefs. In J. C. Kaufman & R. J. Sternberg (Eds.), *Cambridge handbook of creativity* (pp. 396-417). New York: Cambridge University Press.

Kasof, J., Chen, C., Himsel, A., & Greenberger, E. (2007). Values and creativity. Creativity Research Journal, 19 (2-3), 105-122.

Kaufman, J. C. (2012). Counting the Muses: Development of the Kaufman Domains of Creativity Scale (K-DOCS). *Psychology of Aesthetics, Creativity, and the Arts, 6* (4), 298–308.

Kaufman, J. C. (2016). *Creativity 101 (2nd ed.)*. New York: Springer.

Kaufman, J. C. (2018). Finding meaning with creativity in the past, present, and future. *Perspectives on Psychological Science, 13,* 734-749.

Kaufman, J. C. (2019). Self-assessments of creativity: Not ideal, but better than you think. *Psychology of Aesthetics, Creativity, and the Arts, 13,* 187-192.

Kaufman, J. C., & Baer, J. (2012). Beyond new and appropriate: Who decides what is creative? *Creativity Research Journal*, *24,* 83-91.

Kaufman, J. C., Baer, J., & Cole, J. C. (2009). Expertise, domains, and the consensual assessment technique. Journal of Creative Behavior, 43 (4), 223-233.

Kaufman, J. C., Baer, J., Cropley, D. H., Reiter-Palmon, R., & Sinnett, S. (2013). Furious activity vs. understanding: How much expertise is needed to evaluate creative work? *Psychology of Aesthetics, Creativity, and the Arts, 7,* 332-340.

Kaufman, J. C., Glăveanu, V., & Baer, J. (Eds.) (2017). *Cambridge handbook of creativity across domains*. New York: Cambridge University Press.

Kaufman, J. C., Plucker, J. A., & Baer, J. (2008). *Essentials of creativity assessment*. New York: Wiley.

Kaufman, S.B. (2013). Opening up openness to experience: A four-factor model and relations to creative achievement in the arts and sciences. *Journal of Creative Behavior, 47*, 233-255.

Lebedeva, N., Schwartz, S. H., van de Vijver, F. J. R., Plucker, J., & Bushina, E. (2019). Domains of everyday creativity and personal values. *Frontiers in Psychology, 9*, 1–16.

Lee, I. A., & Preacher, K. J. (2013, September). Calculation for the test of the difference between two dependent correlations with one variable in common [Computer software]. Available from http://quantpsy.org

Lindeman, M., & Verkasalo, M. (2005). Measuring values with the short Schwartz value survey. *Journal of Personality Assessment, 85*(2), 170-178.

Luria, S. R., & Kaufman, J. C. (2017). The dynamic force before intrinsic motivation: Exploring creative needs. In M. Karwowski & J. C. Kaufman (Eds.), *The creative self: How our beliefs, self-efficacy, mindset, and identity impact our creativity* (pp. 318-323). San Diego: Academic Press.

McCrae, R. R., & John, P. O. (1992). An introduction to the Five-Factor Model and its applications. *Journal of Personality, 60*, 175–215.

McKay, A. S., Karwowski, M., & Kaufman, J. C. (2017). Measuring the muses: Validating the Kaufman Domains of Creativity Scale (K-DOCS). *Psychology of Aesthetics, Creativity, and the Arts*, *11,* 216-230.

Metzl, E. S. (2009). The role of creative thinking in resilience after hurricane Katrina. *Psychology of Aesthetics, Creativity, and the Arts, 3*, 112-123.

Mohamed, M. S., Khalifa, G. S., Al-Shibami, A. H., Alrajawi, I., & Isaac, O. (2019). The mediation effect of innovation on the relationship between creativity and organizational productivity: An empirical study within public sector organizations in the UAE. *Journal of Engineering and Applied Sciences*, *14*(10), 3234-3242.

Nettle, D. (2006). Psychological profiles of professional actors. *Personality and individual differences*, *40*(2), 375-383.

Nunnally, J. C., & Bernstein, I. R. (1994). *Psychometric Theory.* New York: McGraw-Hill.

Plucker, J. A. (1998). Beware of simple conclusions: The case for the content generality of creativity. *Creativity Research Journal, 11,* 179–182.

Plucker, J. A. (1999). Reanalyses of student responses to creativity checklists: Evidence of content generality. *Journal of Creative Behavior, 33,* 126-137.

Plucker, J. A. (2004). Generalization of creativity across domains: Examination of the method effect hypothesis. *Journal of Creative Behavior, 38,* 1–12.

Plucker, J. A. & Beghetto, R. A. (2004). Why creativity is domain general, why it looks domain specific, and why the distinction does not matter. In R. J. Sternberg, E. L. Grigorenko, & J. L. Singer (Eds.), *Creativity: From potential to realization* (pp. 153–167). Washington, DC: American Psychological Association.

Plucker, J. A., Beghetto, R. A., & Dow, G. T. (2004). Why isn't creativity more important to educational psychologists? Potentials, pitfalls, and future directions in creativity research. Educational Psychologist, 39 (2), 83-96.

Qian, M., & Plucker, J. A. (2018). Looking for renaissance people: Examining domain specificity-generality of creativity using Item Response Theory Models. *Creativity Research Journal*, *30*(3), 241-248.

Qian, M., Plucker, J. A., & Yang, X. (2019). Is creativity domain specific or domain general? Evidence from multilevel explanatory item response theory models. *Thinking Skills and Creativity*. Online First Publication.

Roccas, S. (2005). Religion and value systems. *Journal of Social Issues, 61* (4), 747-759.

Runco, M. A., Dow, G. T., & Smith, W. R. (2006). Information, experience, and divergent thinking: An empirical test. *Creativity Research, 18*, 269–277.

Ruscio, J., Whitney, D. M., & Amabile, T. M. (1998). Looking inside the fishbowl of creativity: Verbal and behavioral predictors of creative performance. *Creativity Research Journal, 11,* 243–263.

Sagiv, L. (2002). Vocational interests and basic values. *Journal of Career Assessment, 10*, 233–257.

Schwartz, S. H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. In Zanna, M. P. (Ed.) Advances in Experimental Social Psychology: Volume 25 (pp. 1-62). Academic Press.

Schwartz, S. H. (1996). Value priorities and behavior: Applying a theory of integrated value systems. In C. Seligman, J. M. Olson, M. P. Zanna (Eds.) The Ontario Symposium: Vol. 8. The psychology of values (pp. 1-24). Hillsdale, NJ: Lawrence Erlbaum.

Schwartz, S. H. (2003). A proposal for measuring value orientations across nations. Retrieved from European Social Survey website: http://www.europeansocialsurvey.org.

Schwartz, S. H. (2008). Draft users manual: Proper use of the schwartz value survey, version 12 July 2008, compiled by Romie F. Littrell. Auklend, New Zealand: Centre for Cross Cultural Comparisons, http:// www.crosscultrualcentre.homestead.com.

Schwartz, S. H., & Boehnke, K. (2004). Evaluating the structure of human values with confirmatory factor analysis. *Journal of Research in Personality, 38*, 230-255.

Schwartz, S. H., Melech, G., Lehmann, A., Burgess, S., & Harris, M. (2001). Extending the cross-cultural validity of the theory of basic human values. *Journal of Cross-Cultural Psychology, 32*, 519–542.

Silvia, P. J., Kaufman, J. C., & Pretz, J. E. (2009). Is creativity domain-specific? Latent class models of creative accomplishments and creative self-descriptions. *Psychology of Aesthetics, Creativity, and the Arts, 3, 139-148.*

Silvia, P. J., Kaufman, J. C., Reiter-Palmon, R., & Wigert, B. (2011). Cantankerous creativity: Honesty-Humility, Agreeableness, and the HEXACO structure of creative achievement. *Personality and Individual Differences, 51*, 687-689.

Silvia, P. J., Wigert, B., Reiter-Palmon, R., & Kaufman, J. C. (2012). Assessing creativity with self-report scales: A review and empirical evaluation. *Psychology of Aesthetics, Creativity, and the Arts, 6* (1), 19–34.

Sternberg, R. J. (2002). "Creativity as a decision": Comment. *American Psychologist, 57*(5), 376.

Sternberg, R. J., & Lubart, T. I. (1995). *Defying the crowd.* New York: Free Press.

Tierney, P., & Farmer, S. M. (2002). Creative self-efficacy: Its potential antecedents and relationship to creative performance. *Academy of Management Journal, 45* (6), 1137–1148.

Young, S. M., & Pinsky, D. (2006). Narcissism and celebrity. *Journal of Research in Personality*, *40*(5), 463-471.

Table 1

Values and definitions in order of creative persons average ranking found in previous studies

Core Value	Definition
Self-direction	*Independent thought and action-choosing, creating, exploring.*
Universalism	*Understanding, appreciation, tolerance, and protection for the welfare of all people and for nature.*
Stimulation	*Excitement, novelty, and challenge in life.*
Benevolence	*Preservation and enhancement of the welfare of people with whom one is in frequent personal contact.*
Hedonism	*Pleasure and sensuous gratification for oneself.*
Achievement	*Personal success through demonstrating competence according to social standards.*
Power	*Social status and prestige, control and dominance over people and resources.*
Security	*Safety, harmony, and stability of society, of relationships, and of self.*
Conformity	*Restraint of actions, inclinations, and impulses likely to upset or harm others and violate social expectations or norms.*
Tradition	*Respect, commitment, and acceptance of the customs and ideas that traditional culture and religion provide the self.*

Note. Adapted from Schwartz (2003).

Table 2

Descriptive statistics for values in both studies and creativity measures in Study 1

	Study 1 $N = 165$				Study 2 $N = 492$			
	M	*SD*	Min.	Max.	*M*	*SD*	Min.	Max.
Core values								
Self-direction	.35	.67	-2.09	2.14	.33	.58	-1.85	2.02
Stimulation	-.90	.99	-3.84	1.91	-.11	.77	-2.44	2.13
Universalism	-.14	.69	-2.61	1.69	.18	.54	-1.50	1.81
Achievement	.48	.60	-1.83	1.94	.15	.71	-2.47	2.03
Hedonism	.05	.98	-3.51	2.60	.12	.73	-3.37	2.04
Conformity	.31	.76	-2.18	2.58	-.08	.69	-2.22	2.55
Benevolence	.76	.66	-.62	5.24	.39	.59	-1.72	2.17
Security	-.04	.67	-2.08	1.62	.03	.53	-2.13	1.63
Power	-1.71	.98	-3.56	.81	-.91	.88	-3.38	1.61
Tradition	-.75	.87	-3.01	.95	-.42	.76	-3.15	2.28
Value Dimensions								
Openness	-.28	.65	-2.19	1.85	.11	.51	-1.47	2.00
Conservation	-.16	.49	-1.70	.81	-.15	.44	-1.68	1.13
Self-transcendence	.31	.44	-1.10	2.20	.28	.43	-1.25	1.76
Self-enhancement	-.40	.54	-2.35	.87	-.21	.51	-1.93	1.39
Creativity								
Visual	2.16	.67	1.00	3.60	--	--	--	--
Verbal	2.54	.68	1.00	4.40	--	--	--	--
Average	2.35	.50	1.10	3.80	--	--	--	--

Note. Statistics reported for core values and value dimensions have been corrected for scale use following Schwartz (2008); Descriptive statistics for creativity measures in Study 2 may be seen in Table 4.

Table 3

Individual-level Spearman correlations between core values and visual, verbal, and averaged creative performance in Study 1

	Creative Domain		
Value	Visual	Verbal	Average
Self-direction	.27*	.21*	.34*
Stimulation	.17*	.09	.17*
Universalism	.03	.14	.15
Achievement	-.01	.00	.02
Hedonism	-.11	.11	-.01
Conformity	.10	-.13	-.02
Benevolence	.02	-.10	-.03
Security	-.09	-.05	-.08
Power	-.13	-.04	-.16
Tradition	.01	-.29*	-.19*

Note. Values are ordered according to the individual-level correlations between participants' values ratings and averaged creativity scores, representing the value hierarchy for averaged creativity.

*$p < .05$

Table 4

Descriptive statistics and correlations between creativity measures in Study 2

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
CAQ																		
1. Visual Art	--																	
2. Music	.18**	--																
3. Dance	.14**	.19**	--															
4. Architecture	.19**	.19**	.24**	--														
5. Creative Writing	.22**	.18**	.18**	.11*	--													
6. Humor	.16**	.11*	.14**	.08	.26**	--												
7. Inventions	.14**	.12**	.06	.35**	.23**	.17**	--											
8. Scientific	.13**	.15**	.11*	.26**	.15**	.14**	.29**	--										
9. Theater Film	.12**	.28**	.24**	.24**	.32**	.21**	.19**	.14**	--									
10. Culinary Arts	.17**	.07	.13**	.15**	.24**	.20**	.29**	.15**	.16**	--								
11. Expression[a]	.68**	.26**	.24**	.19**	.70**	.59**	.29**	.20**	.30**	.29**	--							
12. Performance[a]	.18**	.68**	.68**	.25**	.30**	.20**	.11*	.17**	.58**	.15**	.36**	--						
13. Scientific[a]	.20**	.14**	.13**	.25**	.31**	.25**	.62**	.59**	.23**	.77**	.37**	.21**						
K-DOCS																		
14. Everyday	.05	-.01	.08	0.02	.12*	.09*	.12**	.14**	.02	.13**	.13**	.08	.21**	--				
15. Scholarly	.06	.06	.10*	.14**	.22**	.13**	.21**	.21**	.16**	.09*	.21**	.13**	.24**	.59**	--			
16. Performance	.05	.29**	.23**	.10*	.22**	.21**	.05	.09	.16**	.02	.25**	.35**	.09*	.17**	.39**	--		
17. Scientific	.10*	.11*	.14**	.16**	.08	.12**	.19**	.22**	.05	.05	.16**	.16**	.18**	.06	.36**	.54**	--	
18. Artistic	.28**	.09	.15**	.12*	.15**	.09	.17**	.15**	.07	.13**	.26**	.16**	.2**	.35**	.52**	.50**	.56**	--
N	488	481	482	478	483	481	485	485	484	487	475	471	481	492	492	492	492	492
Mean	1.74	1.64	1.63	1.12	1.81	1.69	1.29	1.30	1.39	1.66	5.24	4.64	4.25	3.63	3.08	2.72	2.46	.30
SD	1.38	1.18	1.36	.70	1.14	.69	.73	.77	.85	.96	2.17	2.41	1.77	.70	.80	.88	.94	.82
Min.-Max	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	1-8	3-18	3-24	3-21	1-5	1-5	1-5	1-5	1-5

Note. [a] Higher order factors; CAQ = Creative Achievement Questionnaire; K-DOCS = Kaufman Domains of Creativity Scale; **p< 01, *p< .05

Table 5

Rank-order correlations among the value hierarchies in Study 2

	1	2	3	4	5	6	7	8
K-DOCS								
1. Everyday	-							
2. Scholarly	.70	-						
3. Performance	-.15	.10	-					
4. Scientific	-.46	-.06	.81	-				
5. Artistic	.41	.72	.10	.23	-			
CAQ								
6. Expression	.35	.60	.79	.57	.47	-		
7. Performance	-.53	-.17	.88	.92	.01	.50	-	
8. Scientific	.66	.86	.28	.16	.84	.64	.02	-

Note. Correlations are tested at the aggregated value level ($N = 10$); Coefficients may be interpreted using Cohen's (1977) guideline, wherein $r = .2$ is small, $r = .5$ is medium, and $r = .8$ is large. CAQ = Creative Achievement Questionnaire; K-DOCS = Kaufman Domains of Creativity Scale

Table 6

Individual-level Spearman correlations between core values and K-DOCS domains in Study 2

	K-DOCS Domain				
Value	Artistic	Everyday/Self	Science	Performance	Scholarly
Self-direction	.13*	.21*	.03	.00	.16*
Stimulation	.13*	.01	.10*	.15*	.07
Universalism	.10*	.08	-.04	-.08	.08
Achievement	-.07	.02	-.01	.08	.00
Hedonism	-.07	.07	-.07	-.01	-.06
Conformity	-.03	-.06	-.01	-.04	-.17*
Benevolence	.00	.18*	-.10*	-.07	.09
Security	-.05	-.08	-.09*	-.10*	-.03
Power	-.03	-.15*	.14*	.14*	.07
Tradition	-.06	-.15*	.05	-.01	-.18*

Note. *$p < .05$

Table 7

Individual-level Spearman correlations between core values and CAQ dimensions in Study 2

	CAQ Dimensions		
Value	Expression	Performance	Scientific
Self-direction	.13*	.03	.15*
Stimulation	.15*	.06	.05
Universalism	.04	-.09*	.02
Achievement	.07	.03	-.04
Hedonism	.01	.00	-.05
Conformity	-.12*	.02	-.03
Benevolence	-.01	-.05	.13*
Security	-.14*	-.04	-.09*
Power	.07	.09	-.02
Tradition	-.09*	.04	-.07

Note. $^{*}p < .05$

Table 8

Individual-level Spearmen correlations between creativity and higher order value dimensions in Study 2

	Dimension 1		Dimension 2	
	Openness	Conservation	Self-transcend	Self-enhance
K-DOCS				
Everyday	.13**	-.18**	.18**	-.06
Scholarly	.14**	-.22**	.12**	.02
Performance	.09	-.07	-.10*	.14**
Scientific	.08	-.01	-.09*	.07
Artistic	.16**	-.07	.06	-.08
CAQ				
Expression	.16**	-.18**	.02	.07
Performance	.04	.01	-.12*	.09
Scientific	.10*	-.09	.09	-.05

Note. $^{*}p < .05$, $^{**}p < .01$