



University of Nebraska at Omaha
DigitalCommons@UNO

Psychology Faculty Publications

Department of Psychology

10-2011

Cantankerous creativity: Honesty–Humility, Agreeableness, and the HEXACO structure of creative achievement

Paul J. Silvia

University of North Carolina at Greensboro

James C. Kaufman

California State University - San Bernardino

Roni Reiter-Palmon

University of Nebraska at Omaha, rreiter-palmon@unomaha.edu

Benjamin Wigert

University of Nebraska at Omaha, bwigert@unomaha.edu

Follow this and additional works at: <https://digitalcommons.unomaha.edu/psychfacpub>

 Part of the [Psychology Commons](#)

Recommended Citation

Silvia, Paul J.; Kaufman, James C.; Reiter-Palmon, Roni; and Wigert, Benjamin, "Cantankerous creativity: Honesty–Humility, Agreeableness, and the HEXACO structure of creative achievement" (2011). *Psychology Faculty Publications*. 58.
<https://digitalcommons.unomaha.edu/psychfacpub/58>

This Article is brought to you for free and open access by the Department of Psychology at DigitalCommons@UNO. It has been accepted for inclusion in Psychology Faculty Publications by an authorized administrator of DigitalCommons@UNO. For more information, please contact unodigitalcommons@unomaha.edu.



Cantankerous creativity: Honesty–Humility, Agreeableness, and the HEXACO structure of creative achievement

Paul J. Silvia ^{a*}, James C. Kaufman ^b, Roni Reiter-Palmon ^c, Benjamin
Wigert ^c

a Department of Psychology, P.O. Box 26170, University of North Carolina at Greensboro, Greensboro, NC 27402-6170, United States

b Learning Research Institute, Department of Psychology, California State University, San Bernardino, United States

c Department of Psychology, University of Nebraska at Omaha, United States

* Corresponding author. E-mail address: p_silvia@uncg.edu (P.J. Silvia).

Abstract: Creativity research has suggested that creative people are low in agreeableness. To explore this issue, we applied the HEXACO model of personality structure, which offers an expanded representation of interpersonal traits, particularly a distinction between Honesty–Humility and Agreeableness. A sample of 1304 adults completed the HEXACO-60 and several measures of creative achievement and activities. Latent variable models found that Agreeableness had no relationship with creativity, but Honesty–Humility did: people lower in Honesty–Humility had higher creativity scores, consistent with past work on arrogance and pretentiousness among creative people.

Keywords: Creativity, Personality, HEXACO, Agreeableness, Honesty–Humility

A major aim of the study of personality and creativity is to describe what creative people are like. As one of the oldest approaches to creativity research (Barron, 1957), the individual differences approach has uncovered many robust findings as well as some inconsistent findings (Feist, 2010). On the robust side, openness to experience consistently predicts creativity (e.g., King et al., 1996, McCrae, 1987, Nusbaum and Silvia, in press, Silvia et al., 2009 and Silvia et al., 2009). On the inconsistent side, extraversion, neuroticism, conscientiousness, and agreeableness have effects that are weaker, inconsistent, and more complex (e.g., Feist, 1998, King et al., 1996, Reiter-Palmon et al., 2009, Roy, 1996 and Silvia and Kimbrel, 2010).

Agreeableness is particularly intriguing because it captures the interpersonal side of creativity, a side that has received much less attention than the cognitive and behavioral sides, and because research has found inconsistent effects for markers of agreeableness. Several studies suggest that creativity is characterized by low agreeableness. Studies of young adults have found that people high in agreeableness have fewer creative accomplishments (e.g., King et al., 1996). Feist’s (1993) study of scientists found that arrogance and hostility predicted creative eminence, and Burch, Pavelis, Hemsley, and Corr (2006) found that artists were less agreeable than non-artists. Not surprisingly, then, a meta-analysis of creativity and the five-factor model (Feist, 1998) found that hostility, a marker of low agreeableness, predicted higher levels of creative achievement among both scientists and artists.

On the other hand, a qualitative review (Batey & Furnham, 2006) found that low agreeableness was associated with higher artistic and scientific creativity but contended that high agreeableness was associated with high everyday creativity (e.g., creative hobbies and cognitive styles). Feist and Barron (2003) found that several positive interpersonal traits (e.g., low deceitfulness, likeability, and sense of humor) predicted higher creative achievement, a pattern that they noted was inconsistent with prior findings on arrogance and hostility. Similarly, several studies of divergent thinking, a cognitive ability central to creative thought (Nusbaum & Silvia, 2011), have found positive relationships with agreeableness (Silvia et al., 2009 and Silvia et al., 2008).

The HEXACO model of trait structure (Ashton and Lee, 2007 and Ashton and Lee, 2008a) might shed some light on the role of interpersonal traits in creativity, particularly the complex relationships with agreeableness. The HEXACO model differs from conventional Big Five and five-factor models in several respects, but the most salient for our purposes is that it splits five-factor agreeableness into two traits: Honesty–Humility and Agreeableness. Honesty–Humility is defined by facets of sincerity, fairness,

greed-avoidance, and modesty; Agreeableness is defined by facets of forgiveness, gentleness, flexibility, and patience (Ashton & Lee, 2009). Although conflated within traditional trait models, Honesty–Humility and Agreeableness have significant differences (Ashton and Lee, 2005 and Ashton and Lee, 2008b). Interestingly, the markers of Agreeableness identified in past work—primarily arrogance and hostility—would load on separate HEXACO factors: arrogance would fall within (low) Honesty–Humility, and hostility would fall within (low) Agreeableness.

In the present research, we examined the HEXACO structure of creative achievements. A large sample of young adults completed several measures of creative achievements and creative activities, and the relationships between the HEXACO traits—particularly the traits of Honesty–Humility and Agreeableness—and creativity were examined.

1. Method

1.1. Participants

A total of 1304 undergraduate students enrolled in psychology courses at California State University, San Bernardino and University of Nebraska at Omaha participated as part of a research option. The sample was 76% female. The sample ranged in age from 17 to 66, but it consisted primarily of young adults ($M = 22.9$, $Mdn = 21$). Approximately 55% of the sample was European American, 26% was Hispanic/Latino, 7% was African American, and 6% was Asian American, based on self-reports. Additional details about the sample are presented in Silvia, Wigert, Reiter-Palmon, and Kaufman (in press).

1.2. Procedure

People completed the measures online as part of a larger study of individual differences in creativity and personality.¹ The HEXACO traits were measured with the HEXACO-60 (Ashton & Lee, 2009). Each trait is measured with 10 items and defined by four facets, each of which has two or three items.

Creativity was measured with four self-report scales. The Creative Achievement Questionnaire (CAQ; Carson, Peterson, & Higgins, 2005) measures high-level creative achievements in 10 domains. Scores for the 10 domains were summed for an index of overall creative achievement. The Creative Behavior Inventory (CBI; Dollinger, 2003 and Dollinger, 2007) is a 28-item scale that measures how often people have taken part in creative domains, with an emphasis on the domains of arts, crafts, creative writing, and drama. Each item is completed on a 4-point scale (1 = *Neverdidthis*, 4 = *Morethan5times*). The Biographical Inventory of Creative Behaviors (BICB; Batey, 2007) is a 34-item checklist of creative activities that people have done within the past year. Each item is completed using a binary *no/yes* format. The Revised Creativity Domain Questionnaire (CDQ-R; Kaufman et al., 2009) is a 21-item scale that asks people to rate their level of creative ability in diverse areas. The items sort into domains that form a higher-order factor. People complete each item on a 6-point scale (1 = *Notatallcreative*, 6 = *Extremelycreative*). A recent review of self-report creativity assessment found good evidence for the reliability, validity, and convergence of these scales (Silvia et al., in press).

2. Results and discussion

2.1. Data reduction

We modeled the HEXACO traits as latent variables. Each facet's items were averaged for a facet score, and then each trait was defined as a latent variable with its four facet scores as indicators. The variances of the latent variables were fixed to 1. A confirmatory factor analysis (CFA) of this model found mixed evidence for fit: $\chi^2(237\text{ df}) = 1389.364$, $p < .0001$, CFI = .727, SRMR = .070, RMSEA = .066 (90% CI = .063, .069). Modification indices (cutoff = 50) revealed that the largest source of strain involved the Sentimentality facet of Emotionality; the analysis suggested cross-loadings for Sentimentality on Openness, Extraversion, and Agreeableness. We decided to retain the model rather than add cross-loadings or correlations between residuals, given that it is the theoretical specification for the HEXACO, but readers should keep the model fit in mind when evaluating the results. The reliabilities for the latent HEXACO traits, estimated as maximal reliability H (Drewes, 2000 and Hancock and Mueller, 2001), were generally good (see Table 1).

Table 1
Relationships between HEXACO traits and creativity.

Factor	β	p	95% confidence interval	H
Honesty-Humility	-.201	.014	-.361, -.041	.58
Emotionality	.029	.524	-.060, .118	.63
Extraversion	.170	.009	.042, .297	.72
Agreeableness	-.035	.610	-.167, .098	.66
Conscientiousness	-.041	.563	-.181, .099	.73
Openness to experience	.553	.001	.459, .648	.68

Note: β is a fully standardized regression coefficient from the latent variable analysis. H = maximal reliability for the latent variable. The sample size is $n = 1304$.

A CFA of the four measures of creativity defined a latent creativity variable with four indicators: the CAQ ($\alpha = .60$), the CBI ($\alpha = .92$), the BICB ($\alpha = .89$), and the CDQ-R ($\alpha = .89$). The path to the CDQ-R was fixed to 1. Because measures of creative achievement are usually skewed (see Silvia et al. (in press), for a review), the CAQ, CBI, and BICB scores were log transformed. Model fit was good: $\chi^2(2\text{ df}) = 14.06$, $p = .0009$, CFI = .983, SRMR = .019, RMSEA = .068 (90% CI = .038, .103). The intercorrelations of the four scales ranged from $r = .363$ to $r = .499$, and maximal reliability for the creativity variable was good, $H = .77$.

2.2. The HEXACO and creativity

How did the HEXACO traits predict creativity? A structural equation model specified the six traits as predictors of the latent creativity variable. The model explained 35.3% of the variance in creativity; Table 1 displays the effects.

First, as in past research, openness to experience had a large effect on creativity, $\beta = .553$, $p < .001$, and Extraversion had a small-to-medium effect, $\beta = .170$, $p = .009$. Essentially no relationships appeared for Emotionality ($\beta = .029$, $p = .524$) or for Conscientiousness ($\beta = -.041$, $p = .563$). The HEXACO model, as measured with the HEXACO-60, thus replicates the standard findings obtained from other models and measures of personality structure.

Second, Honesty–Humility and Agreeableness had different relationships with creativity. Agreeableness had a near-zero effect, $\beta = -.035$, $p = .610$, but Honesty–Humility had a significant negative effect, $\beta = -.201$, $p = .014$. The effect of Honesty–Humility was small-to-medium in absolute size, and it was slightly larger than the effect for Extraversion, which is widely studied in creativity research (Batey & Furnham, 2006). In a relative sense, then, Honesty–Humility deserves much more attention in future work on personality and creativity.

Based on the present findings, the HEXACO model offers an interesting twist on past research. Many studies have explored the relationship between Agreeableness and creativity, but the present study found a relationship only with Honesty–Humility, not Agreeableness. This finding is consistent with past work on arrogance (e.g., Feist, 1993), which is captured by the pretentiousness and immodesty defined by low Honesty–Humility. We did not find, however, an effect implied by past work on hostility (e.g., Feist, 1993 and Feist, 1998). In the HEXACO, interpersonal hostility is a marker of the Agreeableness factor, but we found no relationship between Agreeableness and creativity.

Research on personality and creativity would benefit from considering a broader range of personality variables. One implication of the present work is that there's value in looking beyond openness to experience and extraversion, the two variables that have attracted the most attention thus far. Openness to experience deserves the attention it gets—it is probably the most central trait to creativity—but focusing on openness and extraversion obscures the role that other aspects of personality play in creativity. Although exploratory, the present research indicates that interpersonal traits deserve more attention in future work. Apart from illuminating the relationship between personality and creativity, work that examines understudied traits would move the field toward its long-range goal of using personality in high-stakes assessments of aptitude for creative fields (see Feist, 2006).

Future work should examine the HEXACO structure of creativity using the more extensive scale. We used the HEXACO-60, a short version of the longer 200-item scale (Ashton & Lee, 2009). Apart from probably yielding better model fit, the longer form would enable a facet-level analysis, which would provide additional insights into how interpersonal traits predict creativity. For example, a relationship between hostility and creativity may appear for the Patience and Gentleness facets of Agreeableness; similarly, the effect of Honesty–Humility may be stronger for the Modesty facet than the others. Future work with the extended scale would more fully exploit the potential of the HEXACO model to clarify the role of interpersonal traits in creativity. In addition, future work should examine if the effects vary across everyday and eminent creativity. Batey and Furnham (2006) suggested that agreeableness relates positively with everyday creativity but negatively with eminent creativity, and this prediction is worth testing directly.

A few limitations of the present work should be noted. First, the sample, although large and diverse, nevertheless primarily consisted of young adults. Creative achievement develops across the lifespan (Feist & Barron, 2003), so the range of creative achievements is smaller in younger samples than in older samples. Second, the present work used only self-report scales. To assess the impact of method bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003), future work should include alternative methods of creativity assessment, such as peer reports, performance tasks, and archival data.

References

- Ashton, M. C., & Lee, K. (2005). Honesty–Humility, the Big Five, and the five-factor model. *Journal of Personality, 73*, 1321–1353.
- Ashton, M. C., & Lee, K. (2007). Empirical, theoretical, and practical advantages of the HEXACO model of personality structure. *Personality and Social Psychology Review, 11*, 150–166.
- Ashton, M. C., & Lee, K. (2008a). The HEXACO model of personality structure and the importance of the H factor. *Social and Personality Psychology Compass, 2*, 1952–1962.
- Ashton, M. C., & Lee, K. (2008b). The prediction of Honesty–Humility-related criteria by the HEXACO and five-factor models of personality. *Journal of Research in Personality, 42*, 1216–1228.
- Ashton, M. C., & Lee, K. (2009). The HEXACO-60: A short measure of the major dimensions of personality. *Journal of Personality Assessment, 91*, 340–345.
- Barron, F. X. (1957). Originality in relation to personality and intellect. *Journal of Personality, 25*, 730–742.
- Batey, M. (2007). *A psychometric investigation of everyday creativity*. Unpublished doctoral dissertation. London: University College.
- Batey, M., & Furnham, A. (2006). Creativity, intelligence, and personality: A critical review of the scattered literature. *Genetic, Social, and General Psychology Monographs, 132*, 355–429.
- Burch, G., Pavelis, C., Hemsley, D. R., & Corr, P. J. (2006). Schizotypy and creativity in visual artists. *British Journal of Psychology, 97*, 177–190.
- Carson, S. H., Peterson, J. B., & Higgins, D. M. (2005). Reliability, validity, and factor structure of the Creative Achievement Questionnaire. *Creativity Research Journal, 17*, 37–50.
- Dollinger, S. J. (2003). Need for uniqueness, need for cognition, and creativity. *Journal of Creative Behavior, 37*, 99–116.
- Dollinger, S. J. (2007). Creativity and conservatism. *Personality and Individual Differences, 43*, 1025–1035.
- Drewes, D. W. (2000). Beyond the Spearman–Brown: A structural approach to maximal reliability. *Psychological Methods, 5*, 214–227.
- Feist, G. J. (1993). A structural model of scientific eminence. *Psychological Science, 4*, 366–371.
- Feist, G. J. (1998). A meta-analysis of personality in scientific and artistic creativity. *Personality and Social Psychology Review, 2*, 290–309.

- Feist, G. J. (2006). *The psychology of science and the origins of the scientific mind*. New Haven, CT: Yale University Press.
- Feist, G. J. (2010). The function of personality in creativity: The nature and nurture of the creative personality. In J. C. Kaufman & R. J. Sternberg (Eds.), *Cambridge handbook of creativity* (pp. 113–130). New York: Cambridge University Press.
- Feist, G. J., & Barron, F. X. (2003). Predicting creativity from early to late adulthood: Intellect, potential, and personality. *Journal of Research in Personality, 37*, 62–88.
- Hancock, G. R., & Mueller, R. O. (2001). Rethinking construct reliability within latent variable systems. In R. Cudeck, S. du Toit, & D. Sörbom (Eds.), *Structural equation modeling: Present and future* (pp. 195–216). Lincolnwood, IL: Scientific Software International.
- Kaufman, J. C., Waterstreet, M. A., Ailabouni, H. S., Whitcomb, H. J., Roe, A. K., & Riggs, M. (2009). Personality and self-perceptions of creativity across domains. *Imagination, Cognition and Personality, 29*, 193–209.
- King, L. A., Walker, L. M., & Broyles, S. J. (1996). Creativity and the five-factor model. *Journal of Research in Personality, 30*, 189–203.
- McCrae, R. R. (1987). Creativity, divergent thinking, and openness to experience. *Journal of Personality and Social Psychology, 52*, 1258–1265.
- Nusbaum, E. C., & Silvia, P. J. (in press). Are openness and intellect distinct aspects of openness to experience? A test of the O/I model. *Personality and Individual Differences*.
- Nusbaum, E. C., & Silvia, P. J. (2011). Are creativity and intelligence really so different? Fluid intelligence, executive processes, and strategy use in divergent thinking. *Intelligence, 39*, 36–45.
- Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology, 88*, 879–903.
- Reiter-Palmon, R., Illies, J. J., & Kobe, L. M. (2009). Conscientiousness is not always a good predictor of performance: The case of creativity. *International Journal of Creativity and Problem Solving, 19*, 27–46.
- Roy, D. D. (1996). Personality model of fine artists. *Creativity Research Journal, 9*, 391–394.
- Silvia, P. J., Wigert, B., Reiter-Palmon, R., & Kaufman, J. C. (in press). Assessing creativity with self-report scales: A review and empirical evaluation. *Psychology of Aesthetics, Creativity, and the Arts*.

- 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., & Kimbrel, N. A. (2010). A dimensional analysis of creativity and mental illness: Do anxiety and depression symptoms predict creative cognition, creative accomplishments, and creative self-concepts? *Psychology of Aesthetics, Creativity, and the Arts*, 4, 2–10.
- Silvia, P. J., Nusbaum, E. C., Berg, C., Martin, C., & O'Connor, A. (2009). Openness to experience, plasticity, and creativity: Exploring lower-order, higher-order, and interactive effects. *Journal of Research in Personality*, 43, 1087–1090.
- Silvia, P. J., Winterstein, B. P., Willse, J. T., Barona, C. M., Cram, J. T., Hess, K. I., et al. (2008). Assessing creativity with divergent thinking tasks: Exploring the reliability and validity of new subjective scoring methods. *Psychology of Aesthetics, Creativity, and the Arts*, 2, 68–85.