THE INFLUENCE OF DARK AND POSITIVE PERSONALITY TRAITS ON DYADIC AND INDIVIDUAL CREATIVITY

by

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The Influence of Dark and Positive Personality Traits

on Dyadic and Individual Creativity

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Abstract

The present study not only replicates Jonason et al.'s (2017) examination of the influence of negative personality traits—the Dark Triad of Machiavellianism, Narcissism, and Psychopathy—upon Creativity Valence; but expands this investigation to examine the influence of positive personality traits—the Light Triad of Kantianism, Humanism and Faith in Humanity, plus General Trust and Prosocial Motivation —between dyads. Specifically, I examine the influence of an individual's negative and positive personality traits on the novelty, fluency, and valence (positive and negative) of ideas, based on a sample of 208 individuals (104 dyads) recruited through Prolific. Analyses reveal Machiavellianism as the only personality trait to significantly predict negative creativity in completing the Problem-Solving Tasks. Moreover, among dyads, the inclusion of at least one person with a positive personality trait significantly increased that dyad's likelihood of generating novel ideas. Unexpectedly, at the individual level, Narcissism and General Trust both were found to predict lower levels of creativity. Theoretical implications, limitations, applications, and future directions are also discussed.

Keywords: Dark Personality, Light Personality, General Trust, Prosocial Motivation, Creativity Valence, Dyadic Creativity.

Introduction and Literature Review

For many decades, researchers have linked positive personality traits, such as extraversion and openness to experience, to positive creativity (Baer et al., 2008; Zare & Flinchbaugh, 2019). Yet creativity is not always positive, suggesting not only that negative creativity needs to be considered, but whether positive and/or negative personality traits can predict the novelty, valence and/or fluency of an idea, in individuals as well as in groups.

Creativity and innovation are highly desired for personal and professional success. Mozart and Picasso were known for their unforgettable contribution to the arts. Thomas Edison and Albert Einstein changed the world with their ingenuity. However, can we really say creativity is always good and positive? According to Gino and Ariely (2012), creativity has a dark side, which directs the power of genius towards harming oneself or other people, with or without intent. And not just negative: Creativity can be positive or malevolent as well.

Taking such an approach toward classifying creativity requires careful consideration of an individual's goals and orientation toward problem-solving. Should that person lean towards beneficence, whether on their own behalf or that of others, the creativity behind their actions can be considered positive; conversely, if their ideas unintentionally cause harm to self or others, it can be considered negative. Worse yet, when harm is caused intentionally, it becomes malevolent.

For a real-life example, consider Facebook, Twitter, and other social networking applications. On the positive side, these apps minimize social distance and, in so doing, easily enhance communications; at the same time, they can be (and often are) used for cyberbullying and hacking. Another example is 3D-printed plastic, widely used to generate

artificial limbs (e.g., 3D Printed Prosthetics) but which can also be used to make guns capable of passing through a metal detector.

So we must ask ourselves: What individual differences motivate people to adopt a positive, negative, or malevolent approach to creativity?

Personality traits have been found to determine and shape not only people's feelings and thoughts, but their creativity. Bellak (1958) famously pronounced all forms of creativity as "permanent operant variables of personality" (p. 364); while MacKinnon (1965) calls personality the bridge that connects an individual's creative tendency to their goals. In order to gain success and reach goals, then, it is important to identify the personality traits of individuals who are classified as highly creative, especially in workplace environments, academia, and the broader community.

Many researchers have found links between creativity and certain personality traits. Although Zare and Flinchbaugh's (2019) meta-analysis discovered an association between creativity and such positive personality traits as openness to experience, extraversion, and conscientiousness, creativity also has a negative side. In this study, both negative personality traits (Machiavellianism, Narcissism, and Psychopathy, i.e., the Dark Triad) and a combination of positive personality traits (the Light Triad, General Trust, and Prosocial Motivation) are shown to have an effect on creative performance. As Mikhail Bakunin once said, "*The urge to destroy is also a creative urge*" (Jensen, 2008).

In terms of negative personality traits, Jonason et al. (2017) have suggested a link between the Dark Triad and the dark side of creativity. However, the methodology they used to capture negative creativity is limited, especially when using the Alternative Uses Task (AUT) which, according to Kapoor and Khan (2016), only captures positive creativity (as most of the products it generates tend to be neutral or positive). At the same time, there is a

scarcity of research examining the link between Creativity Valence and Light Triad (a newly established construct) personality traits.

With such ideas in mind, this study not only replicates previous efforts examining the relationship between Creativity Valence and Negative Personality Traits but addresses this gap in the literature by using the AUT with three objects intended to specifically prime all aspects of creativity and ranging from positive to negative. This relationship is also examined among dyads by testing the influence of both negative and positive personality traits and how various combinations of them affect collaborative creativity.

Dark Personality Traits

Individual personality traits reside within each of us to varying degrees. This variation is responsible for our differences in thought, belief, and emotion; and researchers have long been interested in studying how personality predicts an array of behaviors. As a result, thousands of personality traits have been identified over the years. This study focuses in part on the Dark Triad, a concept which has fascinated researchers for more than 20 years.

The idea of "Dark" personality traits was first introduced by Paulhus and Williams (2002). The Dark Triad is composed of three sub-clinical personality traits: Machiavellianism (Christie & Geis, 1970), Narcissism (Raskin & Terry, 1988), and Psychopathy (Hare, 1985).

First, individuals with high levels of Machiavellianism are characterized by manipulative (Christie & Geis, 1970) and deceptive (Baughman et al., 2014) behaviors. Second, individuals with high levels of Psychopathy are known for antisocial, bold behavior, lack of empathy, and lack of regret (Cleckley, 1951). At the same time, it is important to distinguish between two types of Psychopathy. Primary Psychopathy is genetically based, and is characterized by lack of affective reactivity, manipulation, lying, and cold emotion; whereas Secondary Psychopathy is acquired through one's environment and is characterized by impulsivity and irresponsibility (Muris et al., 2017). Both types of Psychopathy and

Machiavellianism are considered the darkest of the three. Finally, individuals with high levels of Narcissism tend to possess characteristics, such as egotism and self-admiration, which negatively affect their interpersonal relationships (Campbell et al., 2010).

Because these three traits share similar characteristics, they are commonly considered under the same umbrella, i.e., as a triad. Two scales have frequently been used to examine them together: Jones and Paulhaus' (2014) Short Dark Triad Scale (SD3); and Jonason and Webster's (2010) Dirty Dozen Scale (DD). However, some researchers (Glenn & Sellbom, 2015; Jones & Figueredo, 2013) argue that despite the overlap, each has its own unique features and should be tested independently. For example, individuals with high levels of Narcissism are known not only for their malevolent and vicious behaviors but for their vulnerable side and fragile grandiosity (Miller et al., 2010), considered unique among the negative traits. Likewise, the distinction between Primary Psychopathy and Secondary Psychopathy may never be adequately captured without the use of an independent psychopathic scale (Kapoor & Khan, 2016; Muris et al., 2017).

Consequently, we must assume that any composite scale of the Dark Triad will automatically fail to take into account both psychopathic distinctions and the unique features of Narcissism. In other words, even though such scales include items related to all three traits, they are unable to capture all features of each (Persson et al., 2019). For this reason, the independent effects of each trait on creative performance are examined on a trait-by-trait basis.

Positive Personality Traits

In the current study, positive personality traits include the Light Triad, General Trust, and Prosocial Motivation. The Light Triad, developed by Kaufman et al. (2019), was established to examine the more favorable side of individuals and its correlation with high levels of well-being. It is composed of three traits: Kantianism (treating people as they are,

disregarding one's personal goals); Humanism (estimating the respect and worth of every person); and Faith in Humanity (believing in the goodness of others).

Individuals with high levels of Light Triad traits are known for their loving, secure and cooperative interpersonal relationships and orientation towards helping others (Sevi & Doğruyol, 2020; Sevi et al., 2020). Kaufman et al. (2019) also found a correlation with greater intellect and openness to experience. Moreover, a recent meta-analysis by Zare and Flinchbaugh (2019) shows a positive association between openness and creativity. However, while it would appear reasonable to expect that Light Triad traits might predict creativity as well, the relationship between these traits and creative performance has yet to be examined systematically.

Notably, Light Triad personality traits are not a redundant measure for either the Big Five personality traits (especially agreeableness), or the Honesty-Humanity dimension of the HEXACO model of personality. Moreover, the Light Triad is not the opposite of the Dark Triad. Kaufman et al. (2019) found only a moderate negative relationship between Triads, suggesting the absence of Dark Triad traits does not necessarily mean the presence of Light Triad traits. Although the notion of Light traits was derived from the concept of a Dark Triad, there is a degree of independence between the two.

Prosocial Motivation is defined as the psychological and behavioral tendency to exert effort in helping other people (Grant, 2007), such that people characterized as having high Prosocial Motivation are presumed to work at maximum capacity in the presence of others. Research has shown that Prosocial Motivation is associated with both higher job performance and success (De Dreu & Nauta, 2009). Moreover, as R. Buckminster Fuller, the highly creative 20th century inventor once said, "The larger the number for whom I worked, the more positively effective I became. Thus, it is obvious that if I worked always… for all humanity, I would be optimally effective" (Fuller & Kuromiya, 1981, p. 125). It seems likely, then, that

the mere presence of someone with this trait will increase others' propensity to work harder and be more creative, especially if they too have a general tendency to help.

General Trust is defined as "the belief in the benevolence of human nature in general" (Yamagishi & Yamagishi, 1994, p. 139). In the work environment, the presence of General Trust between employees is a fundamental element for not only reducing conflict in terms of inter-firm partnerships but increasing that firm's chances of success. As a psychological state, it allows a person to accept the presence of vulnerability, whether their own or another's (Rousseau et al., 1988). In other words, people tend to trust someone either on the basis of expectation (which is mainly established on the basis of inner characteristics) or through the influence of that someone's behavior. In this study, given that the participants are complete strangers, General Trust is assessed on the basis of expectation.

Creativity

Amabile (1983) defined creativity as the ability to produce novel and useful ideas or products that help individuals adapt to task constraints. Novel ideas are those that are relatively original and unique compared to others, whereas an idea's usefulness is largely based on effectiveness. However, this definition fails to account for the full spectrum of creativity measurement. More specifically, in focusing on the positive aspects of an idea's novelty and usefulness, it misses entirely any possible negative aspects. In fact, some creative ideas that are useful might, intentionally or not, cause harm to others, such as dishonest advertisements and crimes (James & Taylor, 2010). The notion of negative creativity (Moran, 2012) in turn suggests that creativity in general is likely goal-oriented (Clark & James, 1999). Thus, the study of creativity requires that creativity valence of an idea, not just its novelty and usefulness, must be taken into consideration (Kampylis & Valtanen, 2010).

Positive creative outcomes (whether ideas or products) solve problems in novel ways, for example, starting a side business to increase one's financial recourses without hurting

others. In contrast, negative outcomes result in solutions that unintentionally hurt others, such as opening a new retail store that attracts and “steals” a nearby store’s customers. Malevolent outcomes take things a step further with solutions intentionally designed to hurt (Cropley et al., 2010), such as lying, cheating, and bullying, and is also referred to as "harm-based creativity" (Jonason et al., 2017). In order to measure the full picture of creativity, then researchers must consider all aspects creativity, specifically novelty, usefulness, and valence.

Examining creativity

Researchers have depended on different methodologies to examine negative and malevolent creativity. For example, some use self-report inventories of creativity, whereas others depend on ratings and evaluations made by trained raters or experts in creativity research.

Those who depend on others’ ratings have mostly used divergent thinking tasks such as the AUT, which ask participants to provide as many uses as they can for a variety of objects (Gilhooly et al., 2007). However, according to Jonason et al. (2015), such tasks are designed to capture positive creativity, and so typically fail to capture either negative or malevolent creativity, as most of the products generated during these tasks are generally positive. Harris and Reiter-Palmon (2015) and Mitchell (2020) have also used ambiguous scenarios—positive, negative, and neutral—involving others’ ratings of novel solutions to measure creativity valence. In doing so, they were able to address both novelty and creativity valence.

Other researchers have used self-rating scales. For example, Kapoor (2015) used a Likert scale to examine tendencies to capture links between Dark Triad traits and a variety of creativity measures. However, this scale has a fundamental limitation. While using self-reporting to examine creativity may indicate some aspects of creativity, it does not necessarily examine creative ability; instead, it may be assessing impression management.

Moreover, Kapoor's results showed the neutral option to be the most likely response; here too, this scale proved insufficient in terms of capturing negative creativity. What is needed are measures that will allow us to do both.

Teamwork and Creativity

Interestingly, many modern organizations have shifted their attention from individual to team-based creativity in the hopes of increasing group innovation and productivity (Barczak et al., 2010; Mohrman et al., 1995; Pirola-Merlo & Mann, 2004); consequently, studying those factors that enhance group creativity has captured researchers' attention for many years. In the process, some researchers (Barry & Stewart, 1997; Baer et al., 2008; McCrae, 1987; Zhang et al., 2019) have found that individual personality traits, specifically differences in those traits, could enhance group creativity.

Group creativity has largely been examined in terms of brainstorming. As a technique, brainstorming can be defined as the exchange of ideas among group members in order to create a novel solution to a problem (Almutairi, 2015). While there is a fair amount of research that examines group creativity and brainstorming (Paulus, 2000; Sosik et al., 1998; West & Farr, 1990), few studies have empirically examined the relationship between personality traits and group creativity (Shalley et al., 2004). However, Toh and Miller (2016) in particular have shown that particular traits can significantly affect creative outcomes among group members.

With regard to diversity in personality, Donatella Versace, an Italian fashion designer once said, "Creativity comes from a conflict of ideas" (Claire, 2013). Thus, high creative performance can be attained when different ideas are built on each other. Paulus and Kenworthy (2017) among others have emphasized the importance of contrasting perspectives for innovation. For example, different personality traits can increase the likelihood of generating novel ideas. And while some researchers, such as Hoff et al. (2011) have found a

correlation between creative performance and introversion, others, such as Paulus and Kenworthy (2017) and Zare and Flinchbaugh (2019) have found the same between creativity and extraversion. It would seem, then, that combinations of different personality traits might increase team-based creative performance.

Empirical Studies Related to Personality, Creativity, and Teamwork

There are relatively few empirical studies that have successfully linked negative personality traits to negative creativity. At the same time, studies examining the relationship between positive personality traits and creativity in general have produced inconsistent results: none examined the direct relationship between creativity in general and Light Triad traits; and while some studies found that greater creativity did not necessarily coincide with greater levels of General Trust (Bidault & Castello, 2009), others (Grant & Berry, 2011; Tian et al., 2021) including a meta-analysis (Liu et al., 2016) found it to be true in the case of Prosocial Motivation.

Starting with the Dark Triad, Jonason et al. (2015) examined the relationship between negative personality traits and two self-reported creativity scales: the Kaufman Domains of Creativity Scale (K-DOCS), and the Creative Achievement Questionnaire (CAQ). The results revealed that individuals with a high degree of Narcissism felt themselves to be more creative than others. They also found a positive correlation between Psychopathy and creativity and no correlation between Machiavellianism and either creativity scale. Their study was limited in terms of measuring negative creativity, as the purpose of these scales is to measure different creative talents (e.g., artistic, visual arts, and creative writing), and as such they are more likely to capture instances of positive creativity.

Kapoor and Khan (2016) were also interested in examining the relationship between creativity valence and an individual's negative personality traits. They were particularly interested in the validity of two creativity valence measures: one self-reported, involving the

assessment of creativity engagement in different social situations (Kapoor, 2015); the other involving generation of non-social creativity uses of different objects (brick, coffee, and shoe) using the AUT. In the first instance, results revealed that positive responses were successfully produced by the AUT, though negative responses were not. Moreover, no correlation was found between Dark Triad personality traits and negative creativity.

In the second instance, results showed that negative creativity was significantly associated with Machiavellianism, Primary Psychopathy, and Narcissism, while positive creativity did not correlate with any of the Dark Triad traits. In other words, while positive creativity was successfully measured using both creativity scales, negative creativity was not. The advantage here is that researchers were able to find a significant effect for each Dark Triad trait on negative creativity. Unfortunately, while it was able to capture negative creativity, their self-reported creativity scale was limited, for the most part, to three responses: positive, negative, and neutral. While this sort of limitation can motivate and pressure the participant towards creativity, it is unlikely to measure naturalistic or spontaneous creative behavior. Moreover, the objects used in the AUT to measure creativity were what we might consider neutral items, thus decreasing the odds of examining negative and/or malevolent creativity.

Jonason et al. (2017) examined the relationship between Dark Triad personality traits and creativity in general. More specifically, they were interested in using different personality and creativity scales to do so. For personality, they used both Short Dark Triad (Jones & Paulhus, 2014) and the Dark Triad Dirty Dozen (Jonason & Tost, 2010). They then examined the influences of personality traits on a variety of creativity scales, such as the AUT, which allows creativity to be assessed across different raters, as well as a self-reported creativity scale. Unfortunately, the results were inconsistent. While a relationship was found between Narcissism and self-reported creativity, it was not correlated with creativity as measured by

the AUT. Also, while both Machiavellianism and Psychopathy as measured by the Dirty Dozen scale were correlated with the participant's willingness to engage in creative activities capable of harming others, Psychopathy had a non-significant effect. Finally, despite the overlap in findings, results between scales were inconsistent.

The above suggests an overdependence on multiple scales in the quest to measure personality's dark side; at the same time, using a unitary scale would likely prevent capturing all personality traits in play. Too, use of a traditional AUT approach may not allow for measuring negative creativity, as the nature of the objects used tend to be harmless and of themselves unlikely to cause negative outcomes.

On the other hand, few researchers have attempted to examine the relationship between creativity in general and Light Triad personality traits. Malik et al. (2020) appears to be the only study to consider the moderating role of Light Triad personality traits in the relationship between abusive supervision and malevolent creativity. Their results showed people vulnerable to abusive supervision as being more likely to engage in malevolent creativity; while under circumstances of abusive supervision, people characterized with Light Triad personality traits were less likely to engage in malevolent creativity. However, there were limitations to this study as well. Malevolent creativity was assessed using Hao et al.'s (2016) Malevolent Creativity Behavior Scale (MCBS) which also subject to weaknesses from self-reporting. Nor did the researchers control for social desirability, such that participant responses could have been subject to bias. Moreover, any direct relationship between Light Triad personality traits and creativity in general were not considered.

The last two positive personality traits, General Trust and Prosocial Motivation, have both been assessed by means of self-report measures. In terms of General Trust, some researchers (Barczak et al., 2010; Dakhli & De Clercq, 2004) were able to demonstrate the importance of mutual trust in increasing group creativity, while others (Chen et al., 2008)

could not. In terms of Prosocial Motivation, Tian et al. (2021) provided support for its unique contribution to increased creativity after controlling for intrinsic motivation.

In terms of teamwork and creativity, Baer et al. (2008) found that group members with divergent personalities exhibited a higher number of creative ideas. More specifically members with high extraversion, high openness to experience, and low neuroticism were shown to have a positive influence on their group's creativity as compared with those whose members were all extraverted. Even so, high creative performance was conditional upon group membership having a high degree of creative confidence.

Hypotheses

Based on the literature review, the purpose of this study is to: 1) Replicate previous work concerning the role of negative personality traits on negative creativity; 2) Extend the current knowledge about the role of certain positive personality traits in predicting positive creativity; 3) Examine, at the individual level, the relationship between personality traits and creativity valence; 4) Examine the combinations of dyads' personality traits upon creative performance; and 5) Fill the gap in the literature using a modified Alternative Uses Task (AUT), by providing three objects that specifically prime positive, negative, and neutral creativity; these in turn will overcome the limitation of the common creativity measures in capturing negative creativity (Kapoor & Khan, 2017; Mitchel, 2020).

Hypothesis One

*Negative personality traits (Machiavellianism, Narcissism, and Psychopathy, i.e. the Dark Triad) will be significant predictors of negative creativity***.**

Commonly, individuals who are characterized as having negative personality traits are known for their malevolent behaviors. Moreover, Kapoor and Khan (2016) found that people with high levels of Dark Triad traits are more likely to adopt negative creativity. Similarly, Jonason et al. (2017) found that Machiavellianism was the only personality trait that correlated with harm-based creativity.

I predict that increasing levels of negative personality traits will be associated with increased Negative Creativity.

Hypothesis Two

Positive personality traits (Kantianism, Humanism and Faith in Humanity, i.e., the Light Triad) plus General Trust and Prosocial Motivation, will be significant predictors of positive creativity.

Kaufman et al. (2019) found that individuals characterized by Light Triad personality traits are more likely to be concerned about their actions and how they might impact other people. Accordingly, individuals with Light Triad traits are seemingly more likely to adopt solutions that would match their humanistic leanings and to solve problems with a view to not harming others. Furthermore, previous research has found a positive association between General Trust (Bidault & Castello, 2009) and Prosocial Motivation (Grant & Berry, 2011) respectively on creative performance.

I predict that increasing levels of positive personality traits will be associated with increased Positive Creativity.

Hypothesis Three

Dyads composed of participants with combinations of negative and positive personality traits will show a higher level of creative performance than dyads composed of participants with similar personalities.

The complementarity of opposites is a crucial concept in the creative process (Csikszentmihalyi, 1997). Vaughan (1985) too has advocated for the inclusion of opposites in assessing the creative process, whereby creative expression is stimulated by tension between the opposing forces. As a result, negative and positive personality traits should act as a decent match for emphasizing the complementary role of opposites.

I predict that dyads with opposing Combined Personality traits (both Dark and Light) will show greater idea novelty and a higher number of creative ideas as compared with dyads composed of similar Combined Personality traits (either Dark and Dark or Light and Light). In Hypothesis 3, the term Light not only represents the Light Triad but includes General Trust and Prosocial Behavior.

Methodology

Participants

G*power analysis determined that a minimum sample size of 200 participants would be required to detect a medium-sized effect with 95% power. A final sample of 208 participants/104 dyads was recruited through the online platform Prolific (https://prolific.co), composed of 111 Female, 95 Male and 2 Other. At the dyad level, participants were paired anonymously with a random partner, revealing 4 main groups: (Male vs Male = 23; Female vs Female = 30; Mixed gender = 49, and 2 cases included participant refused to specify their gender). The mean age of all participants is 26.27 years (SD=8.69), ranging from 18 to 64. Ethnic composition is 63.9% White, 6.9% Black, 4.3% Hispanic or Latino, 3.3% Asian, 1.5% Multiracial, 1.8% Middle Eastern, with 1.3% refusing to answer.

Procedure

Following recruitment, each participant was provided with a link to QuestionPro to collect demographic information. Next, they were asked to join the instant messaging program ChatPlat (https://www.chatplat.com/) where, upon a clicking the link, they were randomly assigned to pairs for completion of the AUT (Guilford, 1967). Each dyad was given 5 minutes to come up with alternative uses for three objects, each of which appeared in random order across dyads. At the end of 15 minutes, a transcript of the participants' conversation, during which they exchanged ideas, was automatically saved by ChatPlat.

Then, participants were directed back to QuestionPro, where they independently answered six personality scales; similar to Harris and Reiter-Palmon (2015), they also completed two problem-solving tasks, which also appeared in counterbalanced order across participants. The first problem was designed to elicit antisocial responses, to potentially provoke a negative solution. The second problem was designed to elicit prosocial responses,

to potentially provoke a positive solution (greater detail is provided in the next section). In both cases, participants were encouraged to be as creative as possible. Ultimately, participants received $4 as compensation upon completion.

Measures and Materials

All measures are listed in the order they were assessed and are described in detail below.

During the initial QuestionPro survey, participants were provided with information about common uses of the objects in the AUT—a knife, a flower, and a shoe—after which they were sent to ChatPlat to complete the test. Task instructions are given in Appendix A. Afterwards, upon returning to QuestionPro, the final survey was based on the following scales.

The Light Triad scale (LTS; Kaufman et al., 2019) was used to measure the three associated personality traits. It consists of 12 items across three subscales ($\alpha = .72$): Kantianism (e.g., *I prefer honesty over charm*); Humanism (e.g., *I tend to admire others*); and Faith in Humanity (e.g., *I think people are mostly good*) (see Appendix B).

The Narcissistic Personality Inventory (NPI; Raskin & Terry, 1988) was used to measure Narcissism in a nonclinical population ($\alpha = .82$). It consists of 40 forced-choice items, with participants asked to choose between two of them (e.g., *I like to be the center of attention*; *I prefer to blend in with the crowd*) (see Appendix C).

The Levenson Self-Report Psychopathy Scale (LSRP; Levenson, et al., 1995) was used to measure Psychopathy in a nonclinical population ($\alpha = .84$). It consists of 26 items and examines both Primary and Secondary Psychopathy (see Appendix D).

The Machiavellianism Scale (MACH-IV; Christie & Geis, 1970) was used to measure the manipulation behavior in interpersonal relationships ($\alpha = .71$). It consists of 20 items (e.g., *The best way to handle people is to tell them what they want to hear*) (see Appendix E).

The General Trust Scale (GTS; Yamagishi & Yamagishi, 1994) was used to measure each individual's beliefs concerning honesty and trusworthiness (α = .81). It consists of six items (e.g., *Most people are honest*) (see Appendix F).

The Prosocial Motivation Scale (PSMS; Grant & Sumanth, 2009) was used to measure individual's potential to help others (α = .89). It consists of five items (e.g., *I get energized by working on tasks that have the potential to benefit others*) (see Appendix G).

In terms of the two problem-solving tasks, the first was designed to induce a negative response, with participants being asked how they planned to get revenge for a broken laptop without being caught. The second was designed to induce a positive response, with participants being asked how they might help a struggling student without her realizing it. In each case, they were asked to provide the most creative solution that they could come up with (see Appendix H).

Finally, the short form of the Marlowe-Crowne Social Desirability Scale (MCSDS), Strahan and Gerbasi's (1972) was used in order to determine whether data were subject to respondent error, consisting of 10 self-report items (e.g., *I have never deliberately said something that hurt someone's feelings*) (see Appendix I).

Variable Coding

For the AUT, trained lab team members rated each idea for novelty and creativity valence. Responses for Idea Novelty (AUT) were coded using a 5-point Likert scale, ranging from 1 (not at all novel) to 5 (totally novel). Responses for Idea Creativity Valence (AUT) were coded using a 7-point Likert scale, ranging from 1 (very negative) to 7 (very positive). The midpoint of both scales—3 and 4, respectively—indicates neutral. Fluency was determined by counting the number of ideas generated by each participant; subjective scoring for these ideas was based on the Consensual Assessment Technique (CAT), long considered

the gold standard for this method (Carson, 2006), which mimics real word creativity by emphasizing raters' judgments over standardized responses (Baer & McKool, 2009).

Light Triad was coded using the LTS, also a Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree), with the sum of the three personal traits averaged to represent a total score. The higher the score, the higher the likelihood of that individual having positive personality traits.

Dark Triad was coded using three separate scales: the NPI Scale, which forces participants to choose between two alternatives, i.e., narcissistic or not; and the LSRP and MACH-IV Scales, both scored on a 5-point Likert scale, with alternatives ranging from 1 (strongly disagree) to 5 (strongly agree). The higher the score, the higher the likelihood of that individual having negative personality traits.

General Trust was coded using the GTS, a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The higher the score, the higher the individual's overall level of trust.

Prosocial Motivation was coded using the PSMS, a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The higher the score the higher the likelihood an individual will consciously want to help others.

Coding of the two problem-solving tasks was similar to that of the AUT. A 5-point Likert scale for Idea Novelty ranges from 1 (not at all novel) to 5 (totally novel), with a 7-point scale for Idea Creativity Valence ranging from 1 (very negative) to 7 (very positive). The midpoint of both scales—3 and 4, respectively—indicates neutral.

Social Desirability was coded using the dichotomous (Yes/No) MCSDS. The greater the score, the higher the participant's willingness to be viewed favorably by others.

Main Variables

The Primary Independent Variables

At the individual level, three independent variables represent negative personality traits: the three Dark Triad traits (Machiavellianism, Narcissism, and Psychopathy). An additional three independent variables represent positive personality traits: a combination of Light Triad traits (Kantianism, Humanism and Faith in Humanity) plus Prosocial Motivation and General Trust.

At the dyad level, there is one independent variable: Composed Personality. Two sub-variables, each representing a composite of positive and negative personality traits, respectively, were determined as follows: A total score for the combined negative personality traits (Dark) was calculated by standardizing and averaging Machiavellianism, Narcissism and Psychopathy; similarly, a total score for the combined positive personality traits (Light) was calculated by standardizing and averaging Light Triad personality traits, General Trust and Prosocial Motivation. Participants scoring 0.5 SD above the mean for Dark were considered to have a negative personality, while those scoring 0.5 SD above the mean for Light were considered to have a positive personality. Nine participants scored high on both the Dark Triad and the combined positive personality traits and were assigned equally and randomly across the three groups based on their partner personality traits: 3 were assigned to Dark vs Light, 3 to Dark vs Dark, and 3 to Dark vs Normal. In this study, Normal refers to people who do not score as either Light or Dark and should not be taken to represent so-called "normal people."

Dyads were then assigned to one of 6 groups: 15 dyads representing Dark vs. Light; 7 dyads representing Dark vs. Dark; 10 dyads representing Light vs. Light; 26 dyads representing Dark vs Normal; 21 dyads representing Light vs. Normal; and 25 dyads representing Normal, i.e., participants are neither Dark nor Light.

The Primary Dependent Variables at the Dyadic Level

Idea Novelty (AUT). Idea Novelty was determined in two ways. First, each rater subjectively decided how frequently an idea had been repeated in the total pool, after which other raters rated its novelty using the (Ctrl+F) tool (a search command that looks at the actual number of the idea's word root repetition; for example, if a participant searched for "stab" instead of stabbing, all ideas containing the root word "stab" were counted.)

On the 5-point Likert scale, Idea Novelty was rated subjectively (S), with those believed to have been repeated the most rated 1 and those rarely mentioned rated 5, after which the Idea Novelty of each object was calculated: Knife Novelty (S) (M = 2.34, SD =0.80), Flower Novelty (S) (M = 2.24, SD = 0.63), and Shoe Novelty (S) (M = 3.06, SD =0.940.

Idea Novelty using the (Ctrl+F) tool was similarly rated on the 5-point Likert scale according to the following criteria: 5- very novel (ideas repeated between 1 to 9 times), 4-novel (ideas repeated 10 to 19 times), 3-neutral (ideas repeated 20 to 29 times), 2-common (ideas repeated 30 to 39 times), and 1-very common (ideas repeated more than 40 times).

Finally, the Idea Novelty of each object using the (Ctrl+F) tool was calculated: Knife Novelty (Ctrl+F) (M = 3.27, SD =0.99), Flower Novelty (Ctrl+F) (M = 3.01, SD =0.94), and Shoe Novelty (Ctrl+F) (M = 3.61, SD =0.99). Normal distributions of each sub-variable are presented in Appendices J and K.

Three trained raters assigned subjective (S) and (Ctrl+F) ratings for each object [1]. Intra-class correlations (ICC) were then conducted, with reliability ratings as follows: Knife Novelty: ICC = 0.82;0.80, Flower Novelty: ICC = 0.83,0.83, and Shoe Novelty: ICC =

[1] Knife Novelty (S) and Knife Novelty (Ctrl+F) were highly and positively correlated (r =0.78); Shoe Novelty (S) and Shoe Novelty (Ctrl+F), were highly and positively correlated (r =0.70, respectively); Flower Novelty (S) and Flower Novelty (Ctrl+F) were moderately correlated (r =0.34).

0.86,0.86. At the dyad level, the average of each participant's Idea Novelty (AUT) score was calculated to generate an overall dyad-level score for each object.

Moreover, a variable namely “Counted Novel Ideas” was calculated for both the “Ctrl +F” tool and the subjective rating, based on counting the number of novel ideas (greater than 3) provided by each participant. For example, if a participant generates a total of 4 ideas that were rated as: 3, 4, 5, and 1, respectively, a score of (2) will be obtained. This variable was calculated for each AUT object.

Idea Valence (AUT). Idea Valence is determined when the goal toward which it is directed is subjectively determined, and as such may be negative or positive. On the 7-point Likert scale (1-7), a totally positive idea would be considered a 7 and an extremely negative one considered a 1. Three trained raters rated the valence for each object: Knife Valence (M = 4.31, SD =0.65), Flower Valence (M = 4.81, SD = 0.87), and Shoe Valence (M = 4.59, SD = 0.94).

Intra-class correlations (ICC) were then conducted, with reliability ratings as follows: Knife Valence: ICC = 0.95, Flower Valence: ICC = 0.88, and Shoe Valence: ICC = 0.76.

At the dyad level, the average of each participant's Idea Valence was calculated to generate an overall dyad score for each object. Normal distributions of each sub-variable are presented in Appendix L.

Idea Fluency (AUT). Idea fluency is determined by the total number of ideas generated by a participant. Fluency scores for each AUT object are as follows: Knife Fluency (M = 4.73, SD = 3.01), Flower Fluency (M = 4.62, SD = 2.71), and Shoe Fluency (M = 3.98, SD = 2.49). At the dyad level, the total number of ideas for each object was averaged.

Idea Novelty*Valence (AUT). Three Novelty*Valence indices were formed for each object. The average Novelty (S) (1-5) and average Valence[2] (-3 – +3) scores were multiplied to obtain a total Novelty*Valence variable ranging from -15 to +15. Higher scores indicate more novel positive ideas, whereas lower scores indicate more novel negative ideas. Novelty*Valence indices for each object are as follow: Knife Novelty*Valence (M = 1.44, SD = 1.14), Flower Novelty*Valence (M = 2.98, SD = 2.49), Shoe Novelty*Valence (M = 3.54, SD = 2.20). Normal distributions of each sub-variable are presented in Appendix M.

The Primary Dependent Variables at the Individual level

Idea Novelty (Problem-Solving Tasks). Two sub-variables were generated: Revenge Task Novelty (M = 2.79, SD = 1.29) and Helping Task Novelty (M = 2.48, SD = 1.27). Both were rated on a scale of 1 to 5, with 1 representing the most common ideas and 5 the most novel. Three trained raters rated the novelty of each idea. Intra-class correlations for both Revenge Task Novelty (ICC =0.80) and Helping Task Novelty (ICC =0.76) were calculated, leading to a reliable rating. Normal distributions for each sub-variable are presented in Appendix N.

Idea Valence (Problem-Solving Tasks). Two sub-variables were generated: Revenge Task Valence (M = 2.72, SD = 1.11) and Helping Task Valence (M = 5.74, SD = 0.70). Both were rated on a scale of 1 to 7, with 1 representing the most negative ideas and 7 the most positive ideas. Three trained raters rated each idea valence. Intra-class correlations for both Revenge Task Valence (ICC =0.80) and Helping Task Valence (ICC =0.79) were calculated, leading to a good reliable rating. Normal distributions for each sub-variable are presented in Appendix O.

[2] The ratings for this variable were transformed from 1 to 7 to -3 to +3. The reason for this transformation is to calculate the Novel Valence variable by multiplying Novelty times Valence (Novelty*Valence) Accordingly, negative novel ideas should have negative scores, the positive novel ideas should have positive scores, whereas neutral ideas in both novelty and valence will be zero. As a result, there is no need to exclude the neutral ratings from the analysis.

Idea Novelty*Valence (Problem-Solving Tasks). The subjective Novelty*Valence index was used to generate two sub-variables: Helping Task Novelty*Valence (M = 4.76, SD = 3.28) and Revenge Task Novelty*Valence (M = -4.16, SD = 3.82). The average scores for subjective Novelty (1-5) and Valence[3] (-3 – +3) were multiplied to create a total Creativity Novelty*Valence score ranging from -15 to +15. Positive scores indicate ideas that are novel but positive, whereas negative scores indicate ideas that are novel but negative. Normal distributions for each sub-variable are presented in Appendix P.

[3] The ratings for this variable were transformed from 1 to 7 to -3 to +3. The reason for this transformation is to calculate the Novelty Valence variable by multiplying Novelty times Valence (Novelty*Valence) Accordingly, negative novel ideas should have negative scores, positive novel ideas should have positive scores, and neutral ideas in both novelty and valence will be zero. As a result, there is no need to exclude neutral ratings from the analysis.

Results

Data Screening

All variables were analyzed for normality. Although some variables showed signs of non-normality (e.g., Creativity Valence (AUT) and Creative Valence (Problem-Solving Tasks) sub-variables), none required transformation. Means and Standard Deviations for all the study variables are provided in Table 1, with correlational analyses between study variables provided in Table 2.

In keeping with Glenn and Sellbom (2015) and Jones and Figuerdo (2013), each personality trait has been examined independently so as to capture its unique features. Unfortunately, due to insufficient robustness between study items and number of participants, a full factor analysis was not possible.

Table 1

Descriptive Statistics for All Study Variables

Variables	*M*	*SD*	*Alpha/ ICC*	Range
1. Social Desirability	1.53	0.20	0.60	(Yes or No)
2. Light Triad	3.98	0.44	0.72	(1-5)
3. General Trust	3.40	0.69	0.81	(1-5)
4. Prosocial Motivation	4.13	0.60	0.89	(1-5)
5. Machiavellianism	2.88	0.43	0.71	(1-5)
6. Narcissism	.323	0.17	0.82	(A or B)
7. Primary Psychopathy	2.30	0.59	0.84	(1-5)
8. Secondary Psychopathy	2.61	0.61	0.84	(1-5)
9. Knife Novelty (S)	2.34	0.80	0.82	(1-5)
10. Flower Novelty (S)	2.24	0.63	0.83	(1-5)
11. Shoe Novelty (S)	3.06	0.94	0.86	(1-5)
12. Knife Novelty (Ctrl+F)	3.27	0.99	0.80	(1-5)
13. Flower Novelty (Ctrl+F)	3.01	0.94	0.83	(1-5)
14. Shoe Novelty (Ctrl+F)	3.61	0.99	0.86	(1-5)
15. Knife Valence	4.31	0.65	0.95	(1-7)
16. Flower Valence	4.81	0.87	0.88	(1-7)
17. Shoe Valence	4.59	0.94	0.76	(1-7)
18. Knife Fluency	4.73	3.01	-	(1-13)
19. Flower Fluency	4.62	2.71	-	(1-13)
20. Shoe Fluency	3.98	2.49	-	(1-11)
21. Knife (Novelty*Valence)	1.44	1.14	-	(-15 - +15)
22. Flower (Novelty*Valence)	2.98	2.49	-	(-15 - +15)
23. Shoe (Novelty*Valence)	3.54	2.20	-	(-15 - +15)
24. Helping Task Novelty	2.48	1.27	0.76	(1-5)
25. Revenge Task Novelty	2.79	1.29	0.80	(1-5)
26. Helping Task Valence	5.74	0.70	0.79	(1-7)
27. Revenge Task Valence	2.72	1.11	0.80	(1-7)
28. Revenge Task (Novelty*Valence)	-4.16	3.82	-	(-15 - +15)
29. Helping Task (Novelty*Valence)	4.76	3.28	-	(-15 - +15)

M = Mean. SD = Standard Deviation. S = Subjective rating.

Table 2

Intercorrelations of key study variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Social Desirability	1												
2. Light Triad	-.13	1											
3. General Trust	.02	0.45***	1										
4. Prosocial Motivation	-.03	0.41***	0.16*	1									
5. Machiavellianism	-.10	-0.43***	-0.55***	-0.28***	1								
6. Narcissism	-.16*	-0.01	-0.01	-0.04	0.15*	1							
7. Primary Psychopathy	-.09	-0.28***	-0.13	-0.41***	0.56***	0.41***	1						
8. Secondary Psychopathy	-.16*	-0.13	-0.18**	-0.21**	0.44***	0.06	0.40***	1					
9. Knife Novelty (S)	.12	0.02	0.01	-0.06	-0.04	-0.13	-0.02	-0.07	1				
10. Flower Novelty (S)	.08	-0.08	-0.22**	-0.01	0.12	-0.13	0.01	-0.09	0.08	1			
11. Shoe Novelty (S)	.05	-0.07	-0.07	-0.02	0.13	-0.09	0.05	-0.05	0.17*	0.16*	1		
12. Knife Novelty (Ctrl+F)	-.00	0.01	-0.03	0.01	-0.05	-0.19**	-0.13	-0.02	0.78***	0.17*	0.23**	1	
13. Flower Novelty (Ctrl+F)	.06	-0.05	-0.13	-0.11	0.09	-0.07	0.01	-0.04	0.12	0.34***	0.20**	0.11	1
14. Shoe Novelty (Ctrl+F)	.09	-0.08	-0.02	0.00	0.18	0.04	0.11	0.06	0.09	0.03	0.70***	0.14	0.12
15. Knife Valence	.04	-0.08	-0.01	-0.08	-0.11	0.00	-0.04	-0.03	-0.05	0.06	-0.09	-0.04	-0.18*
16. Flower Valence	-.07	0.09	-0.03	0.07	0.07	-0.05	-0.08	0.02	0.06	0.34***	-0.06	0.11	-0.08
17. Shoe Valence	-.07	0.04	0.00	0.06	-0.01	-0.00	0.01	-0.03	-0.23**	-0.01	0.24***	-0.11	-0.05
18. Knife Fluency	.05	0.02	0.08	0.03	-0.09	-0.16*	-0.18**	-0.13	0.24***	0.15*	0.29***	0.31***	0.15*
19. Flower Fluency	.08	-0.10	-0.03	0.05	0.02	-0.07	-0.06	-0.10	0.14*	0.15*	0.18*	0.15*	0.24***
20. Shoe Fluency	.07	0.03	-0.02	0.11	-0.07	-0.25***	-0.21**	-0.04	0.12	0.20**	0.39***	0.22**	0.17*
21. Knife (Novelty*Valence)	-.00	-0.09	-0.11	0.04	0.13	-0.04	0.07	0.11	0.07	0.01	0.02	0.13	-0.08
22. Flower (Novelty*Valence)	.05	0.12	-0.01	-0.00	0.16*	-0.02	0.05	0.03	0.03	0.32***	0.05	0.03	0.07
23. Shoe (Novelty*Valence)	.01	-0.06	-0.06	-0.05	-0.04	-0.10	-0.07	-0.07	0.13	0.13	0.48***	0.16*	0.06
24. Helping Task Novelty	.02	0.07	-0.02	0.08	0.04	-0.06	0.01	-0.04	0.07	-0.02	0.10	-0.03	0.02
25. Revenge Task Novelty	.01	-0.03	-0.03	-0.06	0.05	0.04	0.06	-0.04	0.10	0.08	-0.06	-0.01	0.05
26. Helping Task Valence	-.01	-0.08	-0.05	-0.01	0.07	0.00	0.04	0.05	0.05	-0.01	-0.03	0.01	-0.04
27. Revenge Task Valence	-.03	0.10	0.12	0.05	-0.24***	0.05	-0.02	0.01	-0.09	-0.06	-0.04	-0.15*	-0.08
28. Revenge Task (Novelty*Valence)	.00	0.10	0.08	0.14	-0.21**	0.02	-0.11	-0.02	-0.04	-0.07	-0.05	-0.07	-0.12
29. Helping Task (Novelty*Valence)	-.01	0.05	-0.01	0.07	0.01	-0.05	0.02	-0.00	0.09	-0.02	0.05	-0.02	-0.03

Table 2 (continued)

Variable	14	15	16	17	18	19	20	21	22	23
14. Shoe Novelty (Ctrl+F)	1									
15. Knife Valence	-0.18*	1								
16. Flower Valence	-0.04	0.07	1							
17. Shoe Valence	0.29***	0.08	0.04	1						
18. Knife Fluency	0.17*	-0.10	0.09	-0.05	1					
19. Flower Fluency	0.12	-0.19**	0.18**	-0.03	0.51***	1				
20. Shoe Fluency	0.37***	-0.10	0.06	0.15*	0.49***	0.33**	1			
21. Knife (Novelty*Valence)	0.07	-0.41***	-0.01	-0.08	0.10	0.07	0.04	1		
22. Flower (Novelty*Valence)	0.03	-0.02	0.47***	-0.02	0.04	0.08	0.01	0.07	1	
23. Shoe (Novelty*Valence)	0.31***	0.08	0.16*	0.53***	0.20**	0.14	0.34***	-0.00	0.00	1
24. Helping Task Novelty	0.09	-0.04	-0.05	-0.00	-0.05	-0.10	-0.12	-0.04	0.06	-0.06
25. Revenge Task Novelty	-0.12	0.06	-0.04	-0.11	-0.04	0.02	0.01	-0.10	-0.01	-0.07
26. Helping Task Valence	-0.01	0.01	-0.08	-0.09	-0.06	0.06	-0.06	-0.07	0.00	0.04
27. Revenge Task Valence	-0.08	0.18*	0.05	0.05	-0.01	-0.19**	0.02	-0.04	-0.02	0.10
28Revenge Task (Novelty*Valence)	-0.03	0.09	0.05	0.09	0.02	-0.17*	0.02	0.05	-0.02	0.09
29. Helping Task (Novelty*Valence)	0.06	-0.00	-0.09	-0.07	-0.10	-0.06	-0.13	-0.04	0.04	-0.01

Table 2 (continued)

Variable	24	25	26	27	28	29
24.Positive Creativity Novel	1					
25. Negative Creativity Novel	0.05	1				
26. Positive Creativity Valence	0.19**	0.07	1			
27. Negative Creativity Valence	0.01	-0.16*	-0.08	1		
28. Negative Creativity (Novelty*Valence)	0.02	-0.61***	-0.03	.81***	1	
29. Positive Creativity (Novelty*Valence)	0.84***	0.08	0.64***	-0.00	0.01	1

Note. ** $p < 0.01$ (2-tailed); * $p < 0.05$ level (2-tailed), N = 208

Hypotheses One and Two

Hypothesis One states that negative personality traits—Machiavellianism, Narcissism and Psychopathy (i.e., the Dark Triad)—will be significant predictors of Negative Creativity. A linear regression analysis was conducted to determine whether individual negative personality traits would predict Revenge Task Valence. All the positive and negative personality traits were included as the independent variables and the Revenge Task valence was entered as the dependent variable. Furthermore, all regression assumptions were met: linear relationship, independence of residual, homoscedasticity, multicollinearity, and normality.

Among negative personality traits, Machiavellianism, b = -0.715, SE =.225, $t(202)$ = -3.182, p =0.002, 95% CI [-1.158, -.272] was the only significant predictor in predicting Revenge Task Valence. Individuals with high levels of Machiavellianism significantly generated ideas with the most negative valence, as shown in Table 3.

Table 3

Table 2. *Results of positive and negative personality traits predicting Revenge Task Valence (top panel) and Helping Task Valence (bottom panel)*

Variable	ß	*t*	*Partial correlation*	R	R^2
		Revenge Task Valence			
Step 1				.303	.092

Machiavellianism	-.053	-3.89**	-.266		
Narcissism	.007	.561	.040		
Primary Psychopathy	.017	1.43	.101		
Secondary Psychopathy	.023	1.59	.112		
Light	.000	.011	.001		
General Trust	-.017	-.724	-.051		
Prosocial Behavior	.013	.432	.031		
		Helping Task Valence			
Step 1				.121	.015
Machiavellianism	.005	.559	.040		
Narcissism	-.002	-.266	-.019		
Primary Psychopathy	-.004	-.522	-.037		
Secondary Psychopathy	.000	.-.055	-.004		
Light	-.011	-.989	-.070		
General Trust	-.003	-.170	-.012		
Prosocial Behavior	.003	.189	.013		

ß = standardized coefficient. t = t value.

On the other hand, none of the other negative personality traits significantly predicted Revenge Task Valence. Narcissism was not a significant predictor for Revenge Task Valence, $b = 0.248$, $t(202) = 0.548$, $p = 0.548$, and nor was Primary Psychopathy, $b = 0.194$, $t(202) = 1.171$, $p = 0.243$.

Furthermore, I examined the prediction of the average Dark Triad negative personality traits (Machiavellianism, Psychopathy, and Narcissism) collectively, on Revenge Task Valence, and the result showed that this variable significantly predicted Revenge Task Valence, indicating that individuals with high levels of Negative Traits generated more negatively valenced ideas, b = -0.64, SE =.185, t(202) = -3.47, p =0.002, 95% CI [-1.00 -.277].

Hypothesis Two stated that positive personality traits—Kantianism, Humanism and Faith in Humanity (i.e., the Light Triad)—plus General Trust and Prosocial Motivation will be significant predictors for Helping Task Valence. Similar to Hypothesis One, creative

performance was measured using the Problem-Solving Tasks. All the positive and negative personality traits were the independent variables, and the Helping Task Valence was the dependent variable. A linear regression analyses was conducted, to determine whether individual combined positive personality traits would predict Helping Task Valence. All the regression assumptions were met such as, linear relationship, independence of residual, homoscedasticity, multicollinearity, and normality.

Among positive personality traits, none was a significant predictor for Helping Task Valence. Light Triad traits, General Trust, and Prosocial Motivation were not a significant predictors of Helping Task Valence, b = -0.141, $t(203)$ = -1.069, p =0.286; b = -0.044, $t(203)$ = -0.560, p =0.576; b =0.030, $t(203)$ =0.351, p = 726, respectively (see Table 3).

Furthermore, the prediction of the average positive personality traits (Light, General Trust, and Prosocial Motivation) collectively, on Helping Task Valence were examined, and the result showed to be not significant as well.

To conclude, Hypothesis One was partially supported, with Machiavellianism found to be a significant predictor for Revenge Task Valence, but not, Narcissism and Psychopathy. Moreover, this finding was replicated when using the average of the three negative personality traits (e.g., Dark Triad), similarly, Machiavellianism was the only significant predictor for Revenge Task Valence. Hypothesis Two was not supported, with none of the positive personality traits predicting Helping Task Valence.

Hypothesis Three

Hypothesis Three states that dyads composed of participants with combinations of negative and positive personality traits will show higher levels of creative performance than dyads composed of participants with similar combinations. Several multivariate covariance analyses (MANCOVAs) were performed for each object in the AUT (knife, flower, and shoe) with Personality Combinations (Dark vs Dark; Light vs Light; Dark vs Light; Dark, vs

Normal; and Light vs Normal)[4] the independent variable, Social Desirability the covariate, and Idea Novelty (S) and Idea Fluency the dependent variables. While the same independent and covariance variables were used each time, different dependent variables were depending on the object.

When the flower was used as the object, there were no statistically significant differences in either Flower Fluency or Flower Novelty, Wilks' Λ =0.860, F (10, 192) = 1.501, p =0.141; partial $\eta 2$ =0.073. Nor did the between-subjects effect of Personality Combination show any significant difference in terms of Flower Fluency, F (5, 97) = 1.161, p =0.334; partial $\eta 2$ =0.056, or Flower Novelty (S), F (5, 97) = 1.766, p =0.127; partial $\eta 2$ =0.083.

When the shoe was used as the object, there were marginal effects approaching significance for both Shoe Fluency and Shoe Novelty (S), Wilks' Λ =0.833, F (10, 192) = 1.842, p =0.056; partial $\eta 2$ =0.088, However, Personality Combination showed an effect in terms of both Shoe Fluency, F (5, 97) = 2.942, p =0.016; partial $\eta 2$ =0.132, and Shoe Novelty (S), F (5, 97) = 1.125, p =0.352; partial $\eta 2$ =0.055. However, the results of between-subjects effect should be interpreted with caution as the Wilks' Λ indicates this effect is at best approaching significance.

However, results did show a statistically significant difference in the effect of Personality Combination on Knife Novelty (S) and Knife Fluency, respectively, after controlling for Social Desirability, Pillai's trace[5] =0.199, F (10, 194) = 2.140, p =0.023; partial $\eta 2$ =0.099. There was also a significant difference in the between-subjects effect of Personality Combination on Knife Novelty (S, F (5, 97) = 4.048, p =0.002; partial $\eta 2$ =

[4] There were no significant group differences when using the gender combination as the independent variable and knife novelty and fluency as the dependent variable.
[5] All MANCOVA assumptions—linear relationship, homogeneity of regression slopes, outliers, and residual normality—were met, with the exception of homogeneity of variance and covariance, which was found to be violated (and thus Pillai's Trace reported).

0.173), as can be seen in Table 4, but not on Knife Fluency, F (5, 97) = 1.161, p =0.334; partial η2 =0.056. Notably, there was no statistically significant difference in the effect of Personality Combination on Knife Novelty (S) and Knife Fluency when not controlling for social desirability.

Table 4

ANCOVA Results for Using Knife Novelty(S)

Variable	*Sum of Squares*	*df*	*Mean Square*	*F*	*P*	*Partial* η^2
Predictor Intercept	1.218	1	1.218	2.570	0.112	0.026
Social Desirability	1.151	1	1.151	2.429	0.122	0.024
Personality Component	9.595	5	1.919	4.048	0.002**	0.173

df = degree of freedom. F = F value.
*p < 0.05 level (2-tailed); **p < 0.01 (2-tailed).

Due to the significant differences in the effect of Personality Combination on Knife Novelty (S), a pairwise comparison with LSD[6] adjustment was conducted. Results showed that dyads with combinations of Light vs Light (M = 2.432, SD =0.539) and Light vs Normal (M = 2.437, SD =0.511) produced significantly higher levels of novelty as compared to dyads with a combination of Dark vs Normal (M = 1.871, SD =0.886). Moreover, dyads with combinations of Light vs Normal and Light vs Light produced significantly higher levels of Idea Novelty as compared to dyads with a combination of Dark vs Dark (M = 1.782, SD =0.937). Unexpectedly, as shown in Tables 5 and 6, dyads composed of at least one individual with a Positive Personality Trait could be expected to contribute to a greater idea novelty.

[6] There were no significant differences between groups when Bonferroni corrections were used.

Table 5

Descriptive Statistics for Knife Novelty (S)

Personality Combination	*M*	*SD*	N
Light/ Normal	2.44	0.51	21
Light/ Light	2.43	0.54	10
Dark/Light	2.34	0.56	15
Dark/Normal	1.87	0.89	25
Dark/ Dark	1.78	0.94	7

M = Mean. SD = Standard Deviation. N = Number of Dyads.

Table 6

Least Significant Difference (LSD) Between Personality Combinations

Variable			95% CI for Mean Difference		
		Mean Difference	Lower	Upper	SE
Dark/Light	Dark/Dark	0.59	-0.02	1.20	0.31
	Light/Light	-0.18	-0.73	0.37	0.28
	Dark/Normal	0.43	-0.004	0.87	0.22
	Light/Normal	-0.11	-0.56	0.33	0.23
Dark/Dark	Light/ Light	-0.77*	-1.45	-0.10	0.34
	Dark/ Normal	-0.16	-0.73	0.40	0.29
	Light/ Normal	-0.71*	-1.29	-0.13	0.29
Light/Light	Dark/ Normal	0.61*	0.09	1.14	0.26
	Light/ Normal	0.07	-0.45	0.58.	0.26
Dark/Normal	Light/Normal	-0.54*	-0.94	-0.146	0.20

*$p < 0.05$.

A statistically significant difference was also shown in the effect of Personality Component on Knife Novelty (Ctrl+F) and Knife Fluency, respectively, after controlling for Social Desirability, Pillai's trace =0.222, F (10, 190) = 2.367, p =0.012; partial η2 =0.111. However, only Knife Novelty (Ctrl+F) showed a significant between-subjects effect of

Personality Combination, F (5, 95) = 4.529, p =0.001; partial η2 = 0.192). Notably, the effect remained significant when not controlling for social desirability variable.

Due to the significant differences in effect of Personality Combination on Knife Novelty (Ctrl+F), a pairwise comparison with LSD[7] adjustment was conducted. Results showed that dyads with combinations of Light vs Normal (M = 3.55, SD =0.191) and Light vs Light (M = 3.65, SD =0.288) produced significantly higher levels of Idea Novelty as compared to combinations of Dark vs Normal (M = 2.63, SD =0.175) and Dark vs Dark (M = 2.54, SD =0.332). Here too, these findings indicate that even one individual with a positive personality trait will increase the group's ability to generate novel ideas. This result is related to positive Combined Personality traits, and I became interested in determining which variable was driving this effect. Accordingly, I reran the analyses, using each positive trait as a covariate, and discovered Prosocial Behavior and General Trust, but not the Light Triad, to be responsible.

Because of the dependence inherent in the dyadic task, I also examined the influence of positive and negative personality traits on creativity performance using the Actor-Partner Independence Model (APIM; Kashy & Kenny, 2000). I used a user-friendly online app (APIM_SEM) that automatically performed the APIM analysis (Stas et al., 2018).

The APIM analysis takes in consideration the influence that members of dyads have on each other. More specifically, APIM not only allows the researcher to examine the effect of one predictor (personality traits) on one's own outcome (creativity performance) which is called the actor effect, but also examines the influence of one predictor on the partner outcome, which is called the partner effect.

[7] When Bonferroni pairwise comparison was used, the results showed that dyads with combinations of Light vs Normal (M = 3.55, SD =0.191) produced significantly more novel Idea compared to combinations of Dark vs Normal (M = 2.63, SD =0.175).

To do so, four variables were included: (1) the average of all the positive personality traits for partner 1; (2) the average of all the positive personality traits for partner 2; (3) Knife novelty for partner 1; and (4) Knife novelty for partner 2. Similarly, another APIM analysis was performed using the average of negative personality traits for partner 1 and 2 as the independent variables and Counted Novel Ideas [8] for partners 1 and 2 as the dependent variables.

Regarding the positive personality traits, the overall test yields a test statistic of X^2 (6) = 8.800, p = 0.185. However, although the actor effects (.214) were not significant (p =.237, 95% CI [-0.14, 0.57]) and the standardized actor effect is 0.068 (partial r = .067), the partner effects (.549) were significant (p = .009, 95% CI [0.14, 0.96]; see Figure 1), and its overall standardized effect is 0.174 (partial r = .172) This indicates that participants with high levels of positive personality traits can positively influence their partners' creativity level.

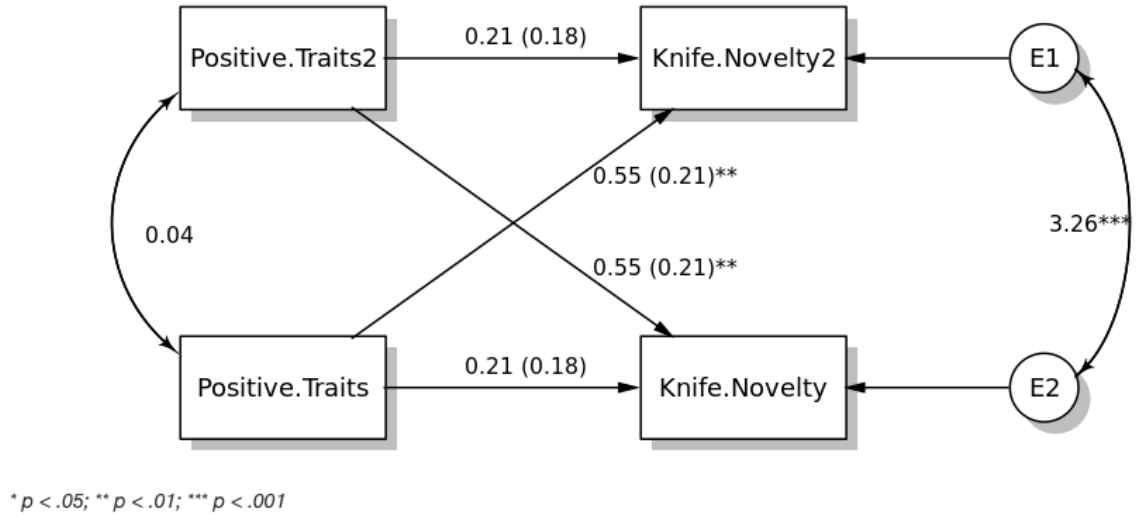


Figure 1. The actor-partner interdependence model for positive personality traits with corresponding standard errors and the significance level of a single independent variable.

[8] This variable is based on counting the most novel ideas that are rated by the "Ctrl +F" tool. I present this variable because it is the only one that showed significant results.

Concerning the negative personality traits, the overall test yields a test statistic of X^2 (6) = 6.657, p = 0.467. However, both the actor effects (-.723, p < .001, 95% CI [-1.11, -0.33]), with a standardized actor effect of -0.239 (partial r = -.207), and the partner effects (-.586, p = .009, 95% CI [-1.03, -0.14]), with an overall standardized effect of -0.194 (partial r = -.168), were significant (see Figure 2). This indicates that participants with high level of negative personality traits can negatively influence not only their own creative performance but also their partners' performance.

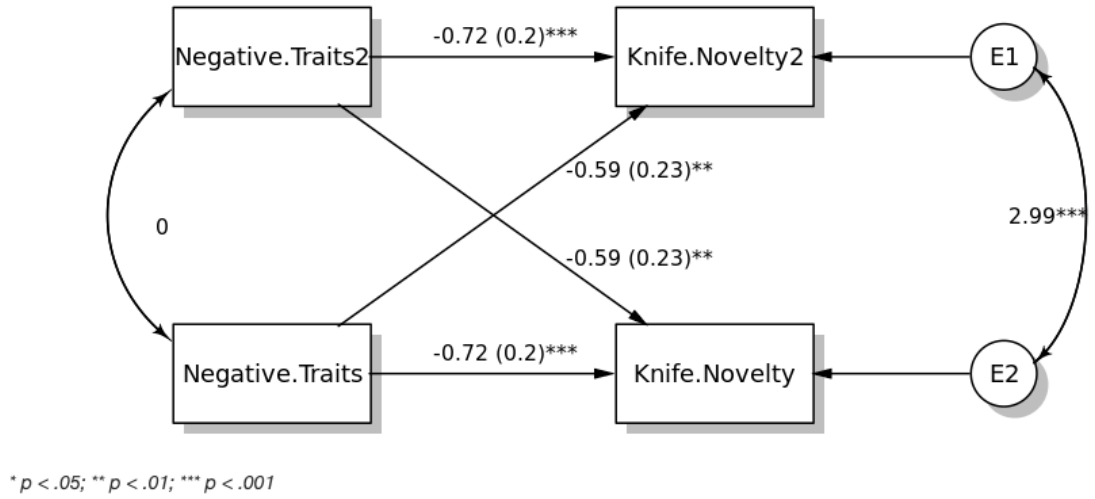


Figure 2. The actor-partner interdependence model for negative personality traits with corresponding standard errors and the significance level of a single independent variable

Accordingly, the results from MANCOVA and the APIM analyses both revealed the importance of having individuals with positive personality traits in a group to positively enhance creativity performance.

To conclude, while Hypothesis Three was not supported, it did reveal an unexpected finding. Regardless of any similarity or difference between dyadic personality combinations, the inclusion of at least one person with a combined positive personality trait will enhance creative performance in terms of idea novelty. This finding was supported regardless of how

novelty was rated. The APIM analyses similarly showed the positive influence of participants' positive personality traits on their partners' performance; on the other hand, the negative personality traits negatively affect individuals own performance as well as their partners'.

Exploratory Analyses

Three unplanned exploratory analyses were conducted. The following three analyses were examined regardless of the individual or dyadic level of the creativity task. In other words I used the data from the AUT (dyadic task) of each participant independently to examine participant performance at the individual level. First, the influence of an individual's personality traits on their ability to generate novel ideas was examined by means of several hierarchical regression analyses. Results showed an unexpected and interesting finding. Among negative personality traits, Narcissism is the only significant predictor of Knife Novelty (Ctrl+F), b = -0.860, SE =0.377, $t(187)$ = -2.282, p =0.024, 95% CI [-1.604, -0.117], as shown in Table 7.

Table 7

Results of the Hierarchical Regression Analysis Predicting Knife Novelty (Ctrl + F)

Variable	ß	*t*	*Partial correlation*	*R*	R^2
Step 1:				0.224	0.050
Social Desirability	0.947	0.298	0.263		
Step 2:				0.328	0.107
Narcissism	-0.860	-2.282**	-0.165		
Machiavellianism	-0.186	-0.917	-0.067		
Primary Psychopathy	-0.040	-0.276	-0.020		
Secondary Psychopathy	-0.097	-0.830	-0.061		

ß = standardized coefficient. t = t value.
*p < 0.05 level (2-tailed); **p < 0.01 (2-tailed).

Notably, when the same relationship was examined with Knife Novelty (S), results were not significant, *b* = -0.629, *SE* =0.332, *t*(192) = -1.893, *p* =0.060, 95% CI [-1.285,0.026], even though they were approaching significance with the same magnitude and direction as Knife Novelty (Ctrl+F). In addition, Narcissism was not a significant predictor, for both Knife novelty(s) and "Ctrl+F" tool, after not controlling for social desirability, however the results approached significance. The implication is that Narcissistic people display less idea novelty and more common ideas.

Next, when regression analyses were performed to determine the influence of positive personality traits on idea novelty, as shown in Table 8, General Trust turned out to be the only significant predictor of Flower Novelty (S), *b* = -0.158, *SE* =0.059, *t*(196) = -2.660, *p* =0.008, 95% CI [-0.275, -0.041]. The implication is that the higher general level of trust in a person, the less novel the ideas that person will have.

Table 8

Results of the Hierarchical Regression Analysis Predicting Flower Novelty (S)

Variable	ß	*t*	*Partial correlation*	*R*	R^2
Step 1:				0.053	0.003
Social Desirability	-0.127	-0.749	-0.053		
Step 2:				0.225	0.051
General Trust	-0.158	-2.660***	-0.180		
Light Triad	-0.053	-0.553	-0.040		
Prosocial Motivation	0.051	0.822	0.059		

ß = standardized coefficient. *t* = *t* value.
*$p < 0.05$ level (2-tailed); **$p < 0.01$ (2-tailed).

Notably, when the same analyses were performed on Flower Novelty (Ctrl+F), *b* = -0.198, *SE* =0.103, *t*(196) = 0-1.920, *p* =0.056, 95% CI [-0.203,0.458], results were not

significant; conversely, they approached significance with the same magnitude and direction as Flower Novelty (S).

Furthermore, the results of examining the prediction of positive personality traits on flower novelty remained the same with or without controlling for social desirability variable on both novelty ratings (i.e., subjective and "Ctrl +F" tool).

Finally, given that Machiavellianism was a significant predictor in terms of Revenge Task Valence, I was interested to examine if the same influence would be found on the Idea Novelty-Valence variable. It is interesting to examine if the same results would be found when taking in consideration Idea Novelty and Idea Valence at the same time.

To address this question, I conducted several hierarchical regression analyses to determine the influence of negative personality traits on Creativity (Novelty*Valence). Results showed Machiavellianism to be the only significant predictor in predicting the Revenge Task (Novelty*Valence), b = -1.857, SE =0.844, t(182) = -2.200, p =0.029, 95% CI [-3.522, -0.192], suggesting that individuals with high levels of Machiavellianism are likely to generate the most negative and novel ideas.

Unexpectedly, Machiavellianism was also found to be a significant predictor of Flower Novelty*Valence (AUT), b = 1.498, SE =0.539, t(188) = 2.781, p =0.006, 95% CI [0.436, 2.561], suggesting that individuals with high levels of Machiavellianism are likely to generate the most positive and novel ideas. Interestingly, participants with this particular trait even proved able to switch the novelty of their ideas between negative and positive outcomes in order to succeed in a given task. However, none of the other negative personality traits nor the positive personality traits influenced any other Novelty*Valence variables in either creativity scale. This exploratory analysis has been reexamined without controlling for social desirability, and the results showed that people with high level of Machiavellianism were able to generate only negative and novel but not positive and novel ideas.

Discussion

While there is a plethora of studies on creativity in general, research on the effect of individual and dyad personality traits upon Creativity Valence are limited. Thus, the purpose of this study is not only to replicate the impact of an individual's dark personality traits upon creative performance but to do so using less biased measurements of creativity and to expand this replication to examine the role of the combined positive personality traits on creative performance among dyads and individuals.

Hypothesis One stated that an individual's negative personality traits (Machiavellianism, Narcissism, and Psychopathy) would be significant predictors for Negative Creativity. This hypothesis was partially supported. Among the negative personality traits, Machiavellianism was a significant predictor for Negative Creativity. Notably, this relationship was supported in the case of the two problem-solving tasks but not the AUT. In terms of the Revenge Task Valence, individuals with a high level of Machiavellianism tended to be more vengeful than those with other personality traits, in that they preferred sending a computer virus to the person who broke their laptop, rather than complaining to the school administration. This finding was expected, as people with a high level of Machiavellianism are known for their aggressiveness, manipulation, and deceptiveness.

Narcissism, however, was not found to be a significant predictor of Negative Creativity. Upon further investigation, it was found to be a significant predictor for Idea Novelty (AUT). Narcissistic people appeared to be less creative and tended to produce more common ideas. Similarly, Jonason et al. (2017), found that narcissistic people assess themselves as more creative in self-reports than assessments by external raters.

Hypothesis Two predicted that an individual's Positive Combined Personality (Light Triad, General Trust, and Prosocial Motivation) would be a significant predictor of Positive

Creativity. This hypothesis was not supported. Although previous research found a positive correlation between Prosocial Motivation and creativity in general (Grant & Berry, 2011), this was not the case here. To better understand this lack of relationship, the influence of Combined Positive personality traits in predicting Idea Novelty was considered. Unexpectedly, General Trust was the only significant predictor of Flower Novelty (S)—although Flower Novelty (Ctrl+F) did approach significance—with individuals having a high level of General Trust more likely to produce commonplace (i.e., not at all novel) ideas. One explanation may be that if there is a high level of trust within dyads, there will be less negotiation and/or need for improvement, thus to a low level of novelty. This finding is supported by Bidault and Castello (2009), who found a moderate (but not high) level of trust to increase group novelty. What then if level of trust increases to the point of overdependency, or decreases to the point of conflict between partners? It would seem, then that having an above or below average of trust could negatively affect the group's overall level of Idea Novelty.

Surprisingly, individual positive and negative personality traits were not shown to predict either Flower Valence (AUT) or Shoe Valence (AUT). One explanation is that personality traits may not be predictive in such cases.

Hypothesis Three examined the effect of the dyads' Personality Combination on Idea Novelty and Idea Fluency. This hypothesis was not supported, but revealed an interesting finding. A significant main effect of Combined Personality was found on both Knife Novelty (S) and Knife Novelty (Ctrl+F) but not Knife Fluency. Further investigation revealed that having two partners, or even one, with a positive personality trait will increase the dyad's level of novelty. The Positive Personality Traits, as a whole, also had a significant effect, even after partialing out Light Triad traits. However, significance is lost once Prosocial Motivation and General Trust is used as covariance. Similarly, the influence of people with

positive personality traits on creativity performance showed its efficacy when using the APIM analysis. More specifically, individual with positive personality traits would positively affect their partner performance.

Successful teamwork, then, requires both General Trust and Prosocial Motivation in order to generate higher levels of Idea Novelty. One explanation is that individuals characterized with high Prosocial Motivation are more likely to enhance their intrinsic motivation by producing high levels of Idea Novelty and, in so doing help their partner to complete the task in question. Previous research has been shown that Prosocial Motivation is associated with both high job performance and personal initiative (De Dreu & Nauta, 2009). Moreover, McAdams and de St Aubin, (1992) stated in their study that individuals with high Prosocial Motivation produced the most useful ideas for subsequent generations. Another explanation is that General Trust's effect on Idea Novelty occurs at the individual not the dyadic level. It would seem then that Prosocial Motivation and General Trust together is an important component for producing Idea Novelty.

Regarding the Light personality traits, it seems that the inclusion of Light had no significant effect on a dyad's ability to produce novel ideas. As a result, care must be taken when considering the direct effect of the Light Triad upon creative performance. Although previous research has noted a moderating effect on the relationship between malevolence and abusive supervision (Malik et al., 2020), a direct relationship between Light Personality Traits and creative performance should not be assumed. In this study, Light was not significantly correlated with either the Idea Novelty (AUT) nor Idea Novelty for the problem-solving tasks, suggesting the need for further investigation.

More importantly, this study compared two techniques for rating the novelty of ideas using the AUT: Idea Novelty (S), where the participants rate subjectively, and Idea Novelty (Ctrl+F), which they used as a search tool, across three objects (e.g., knife, flower, shoe).

Remarkably, regardless of techniques, results from tests of the other hypotheses showed the same magnitude and direction. Given that results using (Ctrl+F) were similar to those obtained through traditional subjective rating, researchers may find the former a better option when dealing with thousands of ideas, with the added benefit of reducing working-memory bias.

Limitations

As with many studies, this study has several limitations. One primary concern is that dyads were not prescreened for their personality traits before recruitment. Doing so in advance would have ensured a sufficient number of dyads representing each of the Combined Personality dyads. Fortunately, random pairings offered sufficient power.

This limitation in turn led to a second. Since dyads were not prescreened, a cutoff point of (0.5) SD above the mean was used to categorize participants as having Negative or Positive Combined Personality. In another words, participants were assigned to a particular group based on the average score of their traits, with those scoring 0.5 above the mean considered to have, respectively negative or positive personality traits. Although some studies have used this method, it runs the risk of making a large categorical distinction between those having an elevated average score (e.g. +0.48 SD above the mean) and those having a lower above-average score (e.g., +0.51 SD above the mean). In this study, it was used solely to include as many dyads as possible.

Another limitation has to do with the reliance on online platforms: participants did not have the chance to meet each other in person and, presumably, interact more effectively. Although online interaction has proven efficacious in other studies, there is the possibility that different and/or more robust results might have been achieved through face-to face interaction.

Finally, this study depended on using the well-known Machiavellianism scale (MACH-IV; Christie & Geis, 1970) which is mainly endorsing certain cynical ideas about how the world works, and how people are. Yet, it doesn't examine personal tendencies to behave in a malevolent way. As a result, researchers may want to examine Machiavellianism using Machiavellian personality scale (Dahling, Whitaker, & Levy, 2009) in future studies.

Theoretical Contributions and Applications

This study was the first to examine whether Positive Combined Personality traits (Light Triad, Prosocial Motivation, and General Trust) had a significant effect on Positive Creativity. Moreover, General Trust was shown to significantly predict Idea Novelty, such that individuals with a high level of General Trust generated more commonplace ideas. Thus, companies and workplaces that care about creative performance should be careful when hiring people with high levels of general trust, as they may over-rely on others to do the work, as well as tend towards agreeing with their coworker ideas rather than building on them. However, this is not to say that having a reasonable level of trust between team members is inadvisable, since without it there is a greater risk of conflict.

Moreover, although, this study was the first to use different objects in priming creativity performance (e.g., negative, positive, and neutral), it is hard to determine which object can specifically predict which type of creativity performance. Further pilot testing and validation should explore this issue systematically.

Second, the current study was able to replicate the work of previous researchers such as Jonason et al. (2017) and Mitchell (2020); both found that among the Dark Triad personality traits, Machiavellianism was a significant predictor of Negative Creativity. Such individuals were not only able to follow the direction of the Problem-Solving Task, but they also came up with the most negative ideas (with the added advantage of knowing how not to be caught). Thus, in workplace environments, Machiavellians may be a good choice for work

in certain challenging situations, as they are determined to win at any cost, and they may be well positioned to come up with a viable plan. However, depending purely on personality traits for employment selection is probably inadvisable, and employers should use a variety of tools for selection purposes.

Third, the current study found that Narcissism was related to low level of creative performance. Thus, whoever is responsible for the employment process should not be deceived with the charming characteristic of Narcissistic people, as they are really good at presenting themselves as being the best on a given task, but the results are often contrary to what they claimed or expected. This is supported by Jonason et al. (2017) who found that while narcissists would rate themselves as highly creative, the results were the complete opposite when their performance was rated by other raters.

Lastly, in term of dyadic creative performance, the result showed that having at least one partner with a high average score of the three positive personality traits together (e.g., Light Triad, General Trust, and Prosocial Motivation), will increase the novelty level among dyads. Thus, in group environment, it may be important to look for employees that have a general trust, prosocial behavior, and Light Triad at the same time. Those people would ensure having a low level of conflict during interpersonal communications, and because of the Prosocial Motivation they would have a high level of inner motivation that enhances their creative thinking and increases the tendency to build on their partners' ideas.

Future Directions

In the future, researchers must take care to prescreen their participants for personality traits. Although time-consuming, it will ensure a sufficient number of dyads, composed of a variety of personality traits and combinations to eliminate potential participants who do not have the requisite mix of traits and better identify those who do.

Another avenue of study would be to examine creative performance with dyads and small groups, where the moderating effect of the quality of face-to-face group interactions may well reveal a significant impact on group outcomes (Hopkins & Hopkins, 2002). By extension, it could reveal how this interaction would moderate the relationship between dyadic or group Combined Personality and creative performance in real-world settings. Furthermore, increasing the time of session interaction will increase the chances for dyads to interact more effectively.

It would also be of interest to examine how individuals' affective states might influence or mediate the relationship between negative and positive personality traits upon creativity performance.

Finally, future dyadic research might also include people-focused tasks rather than relying only on object-focused tasks, such as the AUT. More specifically, creating interpersonal situations may allow people with high levels of dark triad traits to apply their deceptive and manipulative actions more obviously, such as lying, cheating on their partner, causing harm, etc. It would be interesting to see to what degree they treat their partners or others as an object in pursuit of their goals.

Conclusion

As posited at the beginning of this study, creativity is not always positive. Accordingly, creativity should not be linked to positive personality traits alone. Research is needed to investigate its inverse: negative creativity, which can be predicted by an individual's negative personality traits. There is also a gap in the literature examining the relationship between dyadic personality traits and Creativity Valence. This study has made important inroads in this direction, but there is still much to be done.

References

Almutairi, A. N. M. (2015). The effect of using brainstorming strategy in developing creative problem-solving skills among male students in Kuwait: A field study on Saud Al-Kharji School in Kuwait City. *Journal of Education and Practice, 6*(3), 136-145.

Amabile, T. M. (1983). The social psychology of creativity: A componential conceptualization. *Journal of Personality and Social Psychology, 45*(2), 357–376.

Barry, B., & Stewart, G. L. (1997). Composition, process, and performance in self managed groups: The role of personality. *Journal of Applied Psychology*, *82*, 62–78.

Baer, M., Oldham, G. R., Jacobsohn, G. C., & Hollingshead, A. B. (2008). The personality composition of teams and creativity: The moderating role of team creative confidence. *The Journal of Creative Behavior*, *42*(4), 255-282.

Baer, J., & McKool, S. S. (2009). Assessing creativity using the consensual assessment technique. In C. Schreiner (Ed.), *Handbook of research on assessment technologies, methods, and applications in higher education* (pp. 65-77). Hersey, PA: Information Science Reference.

Barczak, G., Lassk, F., & Mulki, J. (2010). Antecedents of team creativity: An examination of team emotional intelligence, team trust and collaborative culture. *Creativity and Iinnovation Management*, *19*(4), 332-345.

Baughman, H. M., Jonason, P. K., Vernon, P. A., & Lyons, M. (2014). Liar liar pants on fire: Cheater strategies linked to the Dark Triad. *Personality and Individual Differences*, *71*, 35–38.

Bellak, L. (1958). Creativity: Some random notes to a systematic consideration. *Journal of Projective Techniques 22*(4), 363-380.

Bidault, F., & Castello, A. (2009). Trust and creativity: Identifying the role of trust in creativity-oriented joint-developments. (ESMT Working Paper, No. 08-010). https://www.econstor.eu/bitstream/10419/96583/1/ESMT-08-010.pdf.

Carson, S. (2006). Creativity and Mental Illness. Invitational Panel Discussion Hosted by Yale's Mind Matters Consortium, New Haven, CT., April 19, 2006.

Campbell, W. K., Miller, J. D., Buffardi, L. E. (2010). The United States and the "culture of narcissism": An examination of perceptions of national character. *Social Psychological & Personality Science, 1*, 222–229.

Christie, R., & Geis, F. (1970). *Studies in Machiavellianism*. New York: Academic Press.

Chen, M.H., Chang, Y.C., & Hung, S.C. (2008) Social capital and creativity in R&D project teams. *R&D Management*, *38*(1), 21-34.

Clark, K., & James, K. (1999). Justice and positive and negative creativity. *Creativity Research Journal*, *12*(4), 311-320.

Claire. (2013, November 26). "Creativity comes from a conflict of ideas" Donatella Versace. *Practical Coaching Solution.* Retrieved April 22, 2021, from https://clairethecoach.wordpress.com/2013/11/26/creativity-comes-from-a-conflict-of-ideas-donatella-versace/.

Cleckley, H. M. (1951). The mask of sanity. *Postgraduate medicine*, *9*(3), 193-197.

Cropley, D., Cropley, A., Kaufman, J., & Runco, M. (Eds.). (2010). *The dark side of creativity*. New York: Cambridge University Press.

Csikszentmihalyi, M. (1997). *Finding flow: The psychology of engagement with everyday life*. Basic Books.

Dakhli, M. & De Clercq, D. (2004) Human capital, social capital, and innovation: a multi-country study.

Dahling, J. J., Whitaker, B. G., & Levy, P. E. (2009). The development and validation of a new Machiavellianism scale. *Journal of Management*, *35*(2), 219-257.

De Dreu, C. K. W., & Nauta, A. (2009). Self-interest and other-orientation in organizational behavior: Implications for job performance, prosocial behavior, and personal initiative. *Journal of Applied Psychology*, 94, 913-926.

Fuller, R. B., & Kuromiya, K. (1981). Critical path. New York: St. Martin's Press.

Gilhooly, K. J., Fioratou, E., Anthony, S. H., & Wynn, V. (2007). Divergent thinking: Strategies and executive involvement in generating novel uses for familiar objects. *British Journal of Psychology, 98*, 611–625.

Gino, F., & Ariely, D. (2012). The dark side of creativity: Original thinkers can be more dishonest. *Journal of personality and social psychology*, *102*(3), 445.

Glenn, A. L., Sellbom, M. (2015). Theoretical and empirical concerns regarding the Dark Triad as a construct. *Journal of Personality Disorders*, *29*, 360–377.

Grant, A. M., & Sumanth, J. J. (2009). Mission possible? The performance of prosocially motivated employees depends on manager trustworthiness. *Journal of Applied Psychology*, *94*(4), 927-944.

Grant, A. M., Campbell, E. M., Chen, G, Cottone, K., Lapedis, D., & Lee, K. (2007). Impact and the art of motivation maintenance: The effects of contact with beneficiaries on persistence behavior. *Organizational Behavior and Human Decision Processes*, *103*, 53-67.

Grant, A. M., & Berry, J. W. (2011). The necessity of others is the mother of invention: Intrinsic and prosocial motivations, perspective taking, and creativity. *Academy of management journal*, *54*(1), 73-96.

Guilford, J.P. (1967). *The nature of human intelligence*. New York: McGraw-Hill.

Hare, R. D. (1985). Comparison of procedures for the assessment of psychopathy. *Journal of Consulting and Clinical psychology*, *53*(1), 7-16.

Harris, D. J., & Reiter-Palmon, R. (2015). Fast and furious: The influence of implicit aggression, premeditation, and provoking situations on malevolent creativity. *Psychology of Aesthetics, Creativity, and the Arts*, *9*(1), 54.

Hao, N., Tang, M., Yang, J., Wang, Q., & Runco, M. A. (2016). A new tool to measure malevolent creativity: The malevolent creativity behavior scale. *Frontiers in Psychology*, *7*, 682.

Hopkins, W. E., & Hopkins, S. A. (2002). Effects of cultural recomposition on group interaction processes. *Academy of Management Review*, *27*(4), 541-553.

Hoff, E. V., Carlson, I. M., & Smith, G. J. W. (2011). Personality. In M. D. Mumford (Ed.), *Handbook of organizational creativity* (pp. 241-270). London: Elsevier.

James, K., & Taylor, A. (2010). Positive creativity and negative creativity (and unintended consequences). *The dark side of creativity*, 33-56.

Jensen, R. B. (2008). Nineteenth century anarchist terrorism: how comparable to the terrorism of Al-Qaeda?. *Terrorism and Political Violence*, *20*(4), 589-596.

Jonason, P.K. & Tost, J. (2010). I just cannot control myself: The Dark Triad and self-control. *Personality and Individual Differences, 49*(6), 611-615.

Jonason, P. K., Webster, G. D. (2010). The Dirty Dozen: A concise measure of the dark triad. *Psychological Assessment, 22*, 420–432.

Jonason, P. K., Richardson, E. N., & Potter, L. (2015). Self-reported creative ability and the Dark Triad traits: An exploratory study. *Psychology of Aesthetics, Creativity, and the Arts*, *9*(4), 488.

Jonason, P.K., Tome, J, Abboud, R., & Dummett, M. (2017). The Dark Triad traits and individual differences in self-reported and other-rated creativity. *Personality and Individual Differences*, *117*, 150-154.

Jones, D. N., Figueredo, A. J. (2013). The core of darkness: Uncovering the heart of the dark triad. *European Journal of Personality*, *27*, 521–531.

Jones, D. N., & Paulhus, D. L. (2011). The role of impulsivity in the Dark Triad of personality. *Personality and Individual Differences, 51*, 679–682.

Jones, D.N., & Paulhus, D.L. (2014). Introducing the Short Dark Triad (SD3): A brief measure of dark personality traits. *Assessment, 21*(1), 28–41.

Kashy, D. A., Kenny, D. A., Reis, H. T., & Judd, C. M. (2000). The analysis of data from dyads and groups. *Handbook of Research Methods in Social and Personality Psychology*, *38*, 451-477.

Kapoor, H.J. (2015). The creative side of the Dark Triad. *Creative Research Journal*, *27*(1), 58-67.

Kapoor, H., & Khan, A. (2016). The measurement of negative creativity: metrics and relationships. *Creativity Research Journal*, *28*(4), 407-416.

Kapoor, H., & Khan, A. (2017). Deceptively yours: Valence-based creativity and deception. *Thinking Skills and Creativity*, *23*, 199-206.

Kampylis, P. G., & Valtanen, J. (2010). Redefining creativity—analyzing definitions, collocations, and consequences. *The Journal of Creative Behavior, 44*(3), 191-214.

Kaufman, S. B., Yaden, D. B., Hyde, E., & Tsukayama, E. (2019). The light vs. dark Triad of personality: Contrasting two very different profiles of human nature. *Frontiers in Psychology 10,* 467.

Levenson, M.R., Kiehl, K.A., & Fitzpatrick, C.M. (1995). Assessing psychopathic attributes in a noninstitutionalized population. *Journal of Personality and Social Psychology 68*(1), 151–152.

Liu, D., Jiang, K., Shalley, C. E., Keem, S., and Zhou, J. (2016). Motivational mechanisms of employee creativity: A meta-analytic examination and theoretical extension of the creativity literature. *Organizational Behavior and Human Decision Processes*. *137*, 236–263.

MacKinnon, D. W. (1965). Personality and the realization of creative potential. *American Psychologist*, *20*, 273–281.

Malik, O. F., Shahzad, A., Waheed, A., & Yousaf, Z. (2020). Abusive supervision as a trigger of malevolent creativity: do the Light Triad traits matter? *Leadership & Organization Development Journal 41*(8), 1119–1137.

McAdams, D. P., & de St Aubin, E. D. (1992). A theory of generativity and its assessment through self-report, behavioral acts, and narrative themes in autobiography. *Journal of Personality and Social Psychology*, *62*(6), 1003-1015.

McCrae, R. R. 1987. Creativity, divergent thinking, and openness to experience. *Journal of Personality and Social Psychology*, *52*, 1258–1265.

Miller, J. D., Dir, A., Gentile, B., Wilson, L., Pryor, L. R., Campbell, W. K. (2010). Searching for a vulnerable Dark Triad: Comparing Factor 2 psychopathy, vulnerable narcissism, and borderline personality disorder. *Journal of Personality*, *78*, 1529–1564.

Mitchell, K. S. (2020). *Mischief Managed: Measuring Malevolent Creativity* [Unpublished doctoral dissertation], University of Nebraska at Omaha.

Moran, S. (2012). Review of: The dark side of creativity. *Psychology of Aesthetics, Creativity, and the Arts*, *6*(3), 295-296.

Mohrman, S., Cohen, S., & Mohrman, A. (1995). *Designing team-based organizations: New forms for knowledge work*. San Francisco: Jossey-Bass.

Muris, P., Merckelbach, H., Otgaar, H., & Meijer, E. (2017). The malevolent side of human nature: A meta-analysis and critical review of the literature on the dark triad (narcissism, Machiavellianism, and psychopathy). *Perspectives on Psychological Science*, *12*(2), 183-204.

Mohrman, S., Cohen, S., & Mohrman, A. (1995). Designing team based organizations: New forum for knowledge work. San Francisco: Jossey-Bass.

Paulhus, D. L., & Williams, K. M. (2002). The dark triad of personality: Narcissism, Machiavellianism, and psychopathy. *Journal of Research in Personality*, *36*(6), 556-563.

Paulus, P. B., & Kenworthy, J. B. (2017). Group and intergroup creativity. In L. Argote & J. M. Levine (Eds.). *The Oxford handbook of group and organizational learning* (pp/ 389-409). New York: Oxford University Press.

Paulus, P. B. 2000. Groups, teams, and creativity: The creative potential of idea-generating groups. *Applied Psychology—An International Review*, *49*, 237–262.

Persson, B. N., Kajonius, P. J., & Garcia, D. (2019). Revisiting the structure of the Short Dark Triad. *Assessment*, *26*(1), 3-16.

Pirola-Merlo, A., & Mann, L. (2004). The relationship between individual creativity and team creativity: Aggregating across people and time. *Journal of Organizational Behavior*, *25*(2), 235-257.

Raskin, R. N. and Terry, H. (1988). A principal-components analysis of the Narcissistic Personality Inventory and further evidence of its construct validity. *Journal of Personality and Social Psychology, 54*(5), 890–902.

Rousseau, D.M., Sitkin, S.B., Burt, R.S. & Camerer, C. (1998). Not so different after all: a cross-discipline view of trust. *Academy of Management Review, 23*(3), 393-404.

Sevi, B., & Doğruyol, B. (2020). Looking from the bright side: The Light Triad predicts Tinder use for love. *Journal of Social and Personal Relationships*, *37*(7), 2136-2144.

Sevi, B., Urganci, B., & Sakman, E. (2020). Who cheats? An examination of light and dark personality traits as predictors of infidelity. *Personality and Individual Differences*, *164*, 110-126.

Shalley, C. E., Zhou, J., & Oldham, G. R. (2004). The effects of personal and contextual characteristics on creativity: Where should we go from here? *Journal of Management*, *30*(6), 933-958.

Sosik, J. J., Avolio, B. J., & Kahai, S. S. (1998). Inspiring group creativity: Comparing anonymous and identified electronic brainstorming. *Small Group Research*, *29*, 3–31.

Strahan, R., & Gerbasi, K. C. (1972). Short, homogeneous versions of the Marlowe-Crowne Social Desirability Scale. *Journal of Clinical Psychology*, *28*, 191-193.

Stas, L., Kenny, D. A., Mayer, A., & Loeys, T. (2018). Giving dyadic data analysis away: A user-friendly app for actor–partner interdependence models. *Personal Relationships*, *25*(1), 103-119.

Tian, X., Peng, X., & Peng, X. (2021). Influence of prosocial motivation on employee creativity: The moderating role of regulatory focus and the mediating role of Knowledge Sharing. *Frontiers in Psychology*, 3880.

Toh, C. A., & Miller, S. R. (2016). Creativity in design teams: the influence of personality traits and risk attitudes on creative concept selection. *Research in Engineering Design*, *27*(1), 73-89.

Vaughan, T. D. (1985). The balance of opposites in the creative process. *Gifted Education International*, *3*(1), 38–42.

West, M. A., & Farr, J. L. (1989). Innovation at work: Psychological perspectives. *Social Behaviour*, *4*(1), 15–30.

Yamagishi, T. & Yamagishi, M. (1994). Trust and commitment in the United States and Japan. *Motivation and Emotion, 18*(2), 129- 166.

Zare, M., & Flinchbaugh, C. (2019). Voice, creativity, and Big Five personality traits: a meta-analysis. *Human Performance*, *32*(1), 30-51.

Zhang, W., Sun, S. L., Jiang, Y., & Zhang, W. (2019). Openness to experience and team creativity: Effects of knowledge sharing and transformational leadership. *Creativity Research Journal*, *31*(1), 62-73.

Appendix A

The AUT Creativity Task
With Modification Upon the Used Objects
(Guilford, 1967)

Once you enter the chat room, interact with your partner to think of as many alternative uses as you can for (knife, shoe, and flower) to build on your partner's ideas. Be as creative as possible.

For the first 5 minutes, please list as many creative uses as possible for a knife (for example, a knife can be used to separate things into small pieces).

For the second 5 minutes, please list as many creative uses as possible for a flower (for example, a flower can be used to make perfume and fragrance).

For the last five minutes, please list as many creative uses as possible for a shoe (for example, a shoe can be used to protect feet).

You should take a maximum of 5 minutes to provide as many uses as you can for each product.

Appendix B

The Light Triad Scale
(Kaufman et al., 2019)

Please rate each on how much you agree with each statement on a scale of
(1) strongly disagree (2) disagree (3) neither agree nor disagree (4) agree (5) strongly agree.

1) I tend to see the best in people
2) I tend to trust that other people will deal fairly with me
3) I think people are mostly good
4) I'm quick to forgive people who have hurt me
5) I tend to admire others
6) I tend to applaud the successes of other people
7) I tend to treat others as valuable
8) I enjoy listening to people from all walks of life
9) I prefer honest over charm
10) I don't feel comfortable overtly manipulating people to do something I want
11) I would like to be authentic even if it may damage my reputation
12) When I talk to people, I am rarely thinking about what I want from them

Appendix C

The Narcissistic Personality Inventory
(Raskin & Terry, 1988)

This inventory consists of a number of pairs of statements with which you may or may not identify.

Consider this example:

A. I like having authority over people
B. I don't mind following orders

Which of these two statements is closer to your own feelings about yourself? If you identify more with "liking to have authority over people" than with "not minding following orders", then you would choose option A.

1. _____ A. I have a natural talent for influencing people.
   B. I am not good at influencing people.
2. _____ A. Modesty doesn't become me.
   B. I am essentially a modest person.
3. _____ A. I would do almost anything on a dare.
   B. I tend to be a fairly cautious person.
4. _____ A. When people compliment me, I sometimes get embarrassed.
   B. I know that I am good because everybody keeps telling me so.
5. _____ A. The thought of ruling the world frightens the hell out of me.
   B. If I ruled the world, it would be a better place.
6. _____ A. I can usually talk my way out of anything.
   B. I try to accept the consequences of my behavior.
7. _____ A. I prefer to blend in with the crowd.
   B. I like to be the center of attention.
8. _____ A. I will be a success.
   B. I am not too concerned about success.
9. _____ A. I am no better or worse than most people.
   B. I think I am a special person.
10. _____ A. I am not sure if I would make a good leader.
    B. I see myself as a good leader.
11. _____ A. I am assertive.
    B I wish I were more assertive.
12. _____ A. I like to have authority over other people.
    B. I don't mind following orders.
13. _____ A. I find it easy to manipulate people.
    B. I don't like it when I find myself manipulating people.
14. _____ A. I insist upon getting the respect that is due me.
    B. I usually get the respect that I deserve.
15. _____ A. I don't particularly like to show off my body.
    B. I like to show off my body.
16. _____ A. I can read people like a book.
    B. People are sometimes hard to understand.
17. _____ A. If I feel competent, I am willing to take responsibility for making decisions.
    B. I like to take responsibility for making decisions.
18. _____ A. I just want to be reasonably happy.

B. I want to amount to something in the eyes of the world.

19. _____ A. My body is nothing special.
B. I like to look at my body.

20. _____ A. I try not to be a show off.
B. I will usually show off if I get the chance.

21. _____ A. I always know what I am doing.
B. Sometimes I am not sure of what I am doing.

22. _____ A. I sometimes depend on people to get things done.
B. I rarely depend on anyone else to get things done.

23. _____ A. Sometimes I tell good stories.
B. Everybody likes to hear my stories.

24. _____ A. I expect a great deal from other people.
B. I like to do things for other people.

25. _____ A. I will never be satisfied until I get all that I deserve.
B. I take my satisfactions as they come.

26. _____ A. Compliments embarrass me.
B. I like to be complimented.

27. _____ A. I have a strong will to power.
B. Power for its own sake doesn't interest me.

28. _____ A. I don't care about new fads and fashions.
B. I like to start new fads and fashions.

29. _____ A. I like to look at myself in the mirror.
B. I am not particularly interested in looking at myself in the mirror.

30. _____ A. I really like to be the center of attention.
B. It makes me uncomfortable to be the center of attention.

31. _____ A. I can live my life in any way I want to.
B. People can't always live their lives in terms of what they want.

32. _____ A. Being an authority doesn't mean that much to me.
B. People always seem to recognize my authority.

33. _____ A. I would prefer to be a leader.
B. It makes little difference to me whether I am a leader or not.

34. _____ A. I am going to be a great person.
B. I hope I am going to be successful.

35. _____ A. People sometimes believe what I tell them.
B. I can make anybody believe anything I want them to.

36. _____ A. I am a born leader.
B. Leadership is a quality that takes a long time to develop.

37. _____ A. I wish somebody would someday write my biography.
B. I don't like people to pry into my life for any reason.

38. _____ A. I get upset when people don't notice how I look when I go out in public.
B. I don't mind blending into the crowd when I go out in public.

39. _____ A. I am more capable than other people.
B. There is a lot that I can learn from other people.

40. _____ A. I am much like everybody else.
B. I am an extraordinary person.

Appendix D

The Levenson Self-Report Psychopathy Scale
(Levenson et al., 1995)

Please rate each on how much you agree with each statement on a scale of
(1) strongly disagree (2) disagree (3) neither agree nor disagree (4) agree (5) strongly agree.

1) In today's world, I feel justified in doing whatever I can get away with to succeed.
2) My main purpose in life is getting as many goodies as I can.
3) Making a lot of money is my most important goal.
4) I let others worry about higher values; my main concern is with the bottom line.
5) People who are stupid enough to get ripped off usually deserve it.
6) Looking out for myself is my top priority.
7) I tell other people what they want to hear so that they will do what I want them to do.
8) I would be upset if my success came at someone else's expense.
9) I often admire a really clever scam.
10) I make a point in trying not to hurt others in pursuit of my goals.
11) I feel bad if my words or actions cause someone else to feel emotional pain.
12) I enjoy manipulating other people's feelings.
13) Even if I were trying really hard to sell something, I wouldn't lie about it.
14) Cheating is not justified because it is unfair to others.
15) I find myself in the same kinds of trouble, time after time.
16) I am often bored.
17) I find that I am able to pursue one goal for a long time.
18) I don't plan anything very far in advance.
19) I quickly lose interests in tasks I start.
20) Most of my problems are due to the fact that other people just don't understand me.
21) Before I do anything, I carefully consider the possible consequences.
22) I have been in a lot of shouting matches with other people.
23) When I get frustrated, I often "let off steam" by blowing my top.
24) Love is overrated.
25) Success is about survival of the fittest, I am not concerned about the losers.
26) For me, what's right is whatever I can get away with.

Appendix E

The MACH-IV Scale
(Christie & Geis, 1970)

Please rate each on how much you agree with each statement on a scale of
(1) strongly disagree (2) disagree (3) neither agree nor disagree (4) agree (5) strongly agree.

_____ 1. Anyone who completely trust anyone else is asking for trouble.
_____ 2. Most people who get ahead in the world lead clean moral lives.
_____ 3. It is safest to assume that all people have a vicious streak and it will come out when they are given a chance.
_____ 4. One should take action only when sure it is morally right.
_____ 5. Generally speaking, people won't work hard unless they're forced to do so.
_____ 6. It is wise to flatter important people.
_____ 7. It is hard to get ahead without cutting corners here and there.
_____ 8. People suffering from incurable diseases should have the choice of being put painlessly to death.
_____ 9. Most people are brave
_____ 10. The best way to handle people is to tell them what they want to hear.
_____ 11. The biggest difference between most criminals and other people is that criminals are stupid enough to get caught.
_____ 12. Honesty is the best policy in all cases.
_____ 13. Barnum was very wrong when he said there's a sucker born every minute.
_____ 14. Most people are basically good and kind.
_____ 15. When you ask someone to do something for you, it is best to give the real reasons for wanting it rather than giving reasons which might carry more weight.
_____ 16. It is possible to be good in all respects.
_____ 17. Most people forget more easily the death of a parent than the loss of their property.
_____ 18. Never tell anyone the real reason you did something unless it is useful to do so.
_____ 19 There is no excuse for lying to someone else.
_____ 20. All in all, it is better to be humble and honest than to be important and dishonest.

Appendix F

The General Trust Scale
(Yamagishi & Yamagishi 1994)

1. Most people are basically honest.
2. Most people are trustworthy.
3. Most people are basically good and kind.
4. Most people are trustful of others.
5. I am trustful.
6. Most people will respond in kind when they are trusted by others.

Appendix G

The Prosocial Motivation Scale
(Grant & Sumanth, 2009)

1. I get energized by working on tasks that have the potential to benefit others.
2. I like to work on tasks that have the potential to benefit others.
3. I prefer to work on tasks that allow me to have a positive impact on others.
4. I do my best when I'm working on a task that contributes to the well-being of others.
5. It is important to me to have the opportunity to use my abilities to benefit others.

Appendix H

Problem-Solving Tasks
(Harris & Reiter-Palmon, 2015)

Negative Problem (Revenge Task)

You are walking to the library when you see a classmate jogging quickly in your direction. It's evident that she does not see you, but before you can do anything, she hits into you and both of you are knocked to the ground. You land hard on your backpack and hear something shatter. Your classmate, who is actually a member of your group for a class project, looks very angry at you as she stands up. She does not apologize, does not offer to help you up, and as she continues past you, she mentions that you just made her late for her class. As you stand up and look in your backpack, you realize that your laptop is ruined. You want to get back at that classmate for hitting into you, being rude, and especially for breaking your laptop, but you do not want to get caught.

Generate as many creative ways of getting back at that classmate as you can, remembering that you do not want your retaliation to be discovered.

Positive Problem (Helping Task)

Over the past few weeks you have been part of a group for a class project. All of the members have gotten along rather well and are doing their fair share of work, but you've noticed that one member in particular seems to be having difficulties learning and understanding the material. Other members of the group have tried helping her, but she seems rather sensitive about receiving any kind of tutoring. You want to help her understand the material, but you want to do so without her realizing that she is being tutored.

Generate as many creative ways of helping your classmate as you can, remembering that you do not want your tutoring to be obvious.

Appendix I

The Social Desirability Scale
(Strahan & Gerbasi, 1972)

Indicate your response to the following statements

1) I like gossip at times.
2) There have been occasions when I took advantage of someone.
3) I'm always willing to admit it when I make a mistake.
4) I always try to practice what I preach.
5) I sometimes try to get even rather than forgive and forget.
6) At times, I have really insisted on having things my own way.
7) There have been occasions when I felt like smashing things.
8) I never resent being asked to return a favor.
9) I have never been irked when people expressed ideas very different from my own.
10) I have never deliberately said something that hurt someone's feelings.

Appendix J

Distribution of Idea Novelty (S) Ratings

Figure J1: Frequency of Knife Novelty (S) Ratings

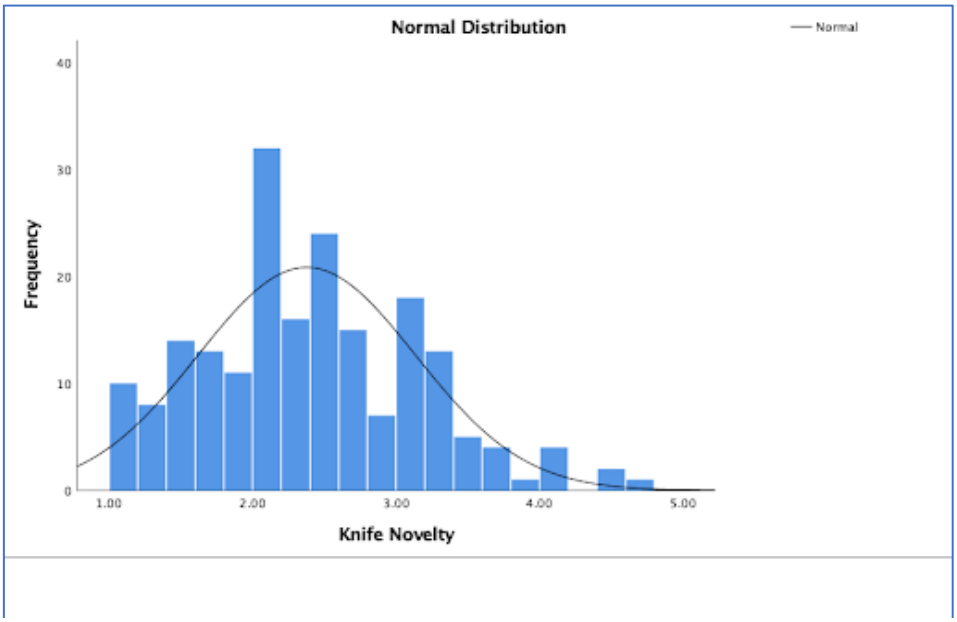


Figure J2: Frequency of Flower Novelty (S) Ratings

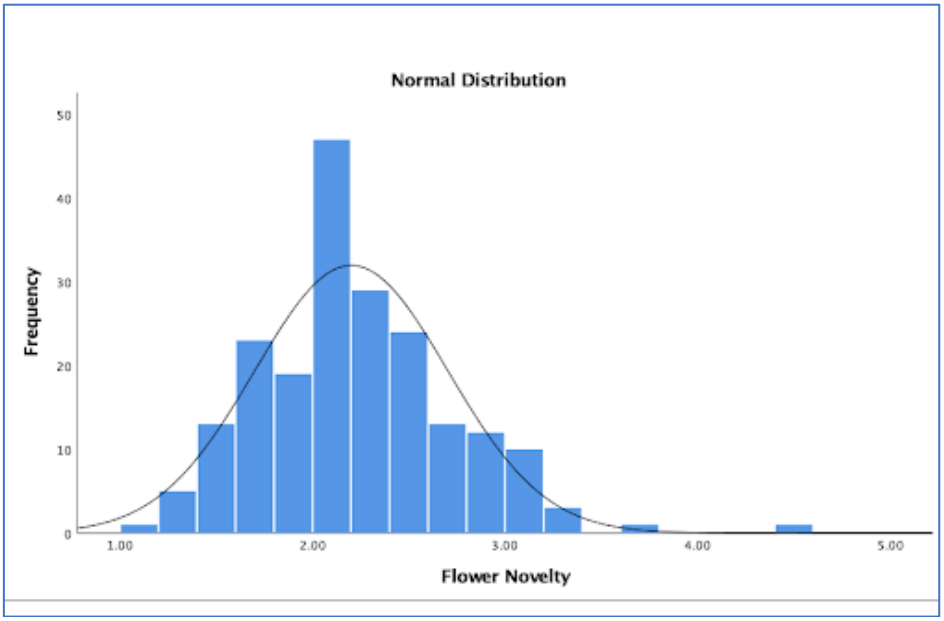
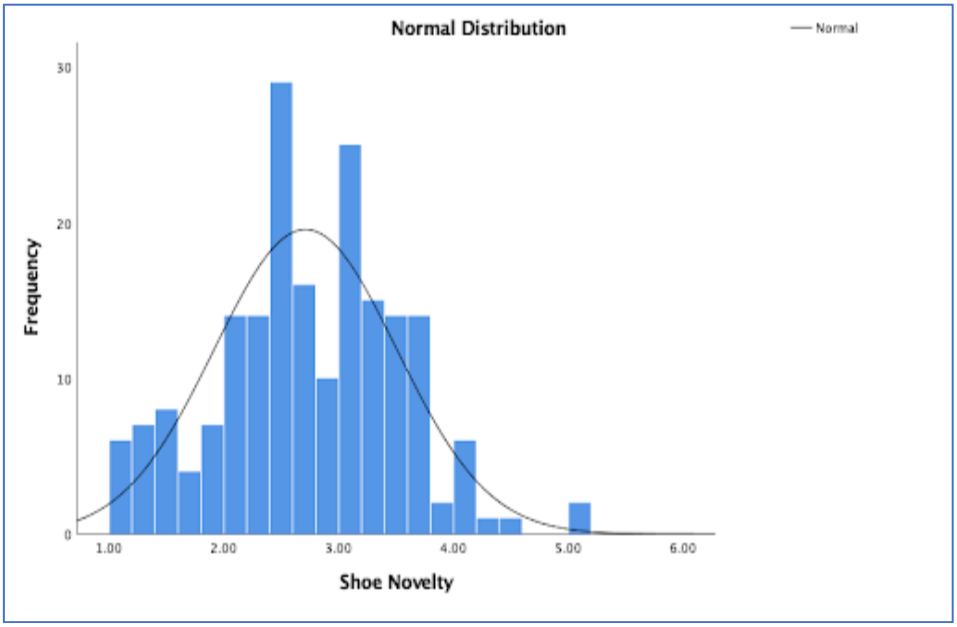


Figure J3: Frequency of Shoe Novelty (S) Ratings



Appendix K

Distribution of Idea Novelty (Ctrl+F) Ratings

Figure K1: Frequency of Knife Novelty (Ctrl+F) Ratings

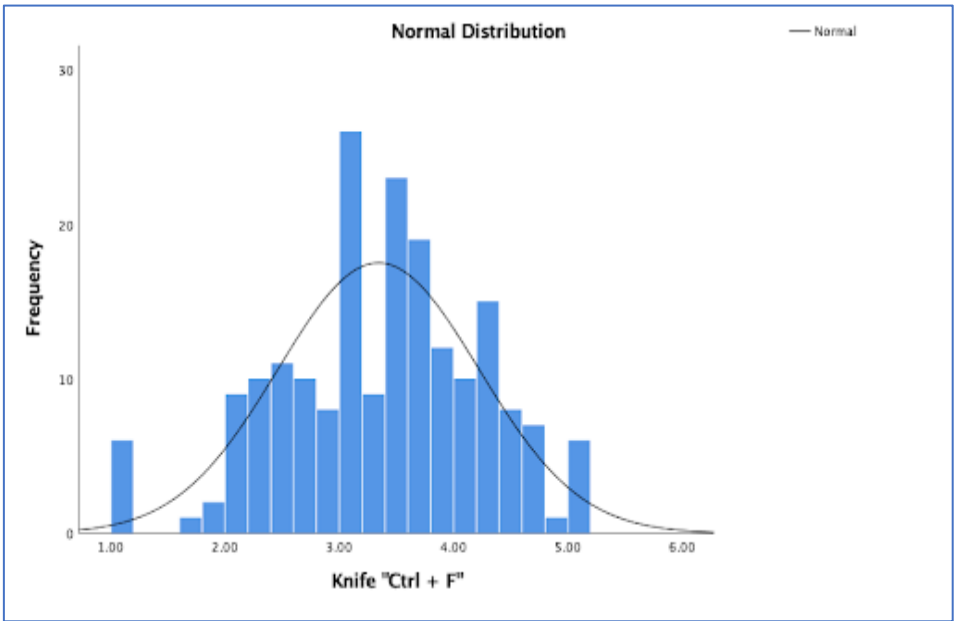


Figure K2: Frequency of Flower Novelty (Ctrl+F) Ratings

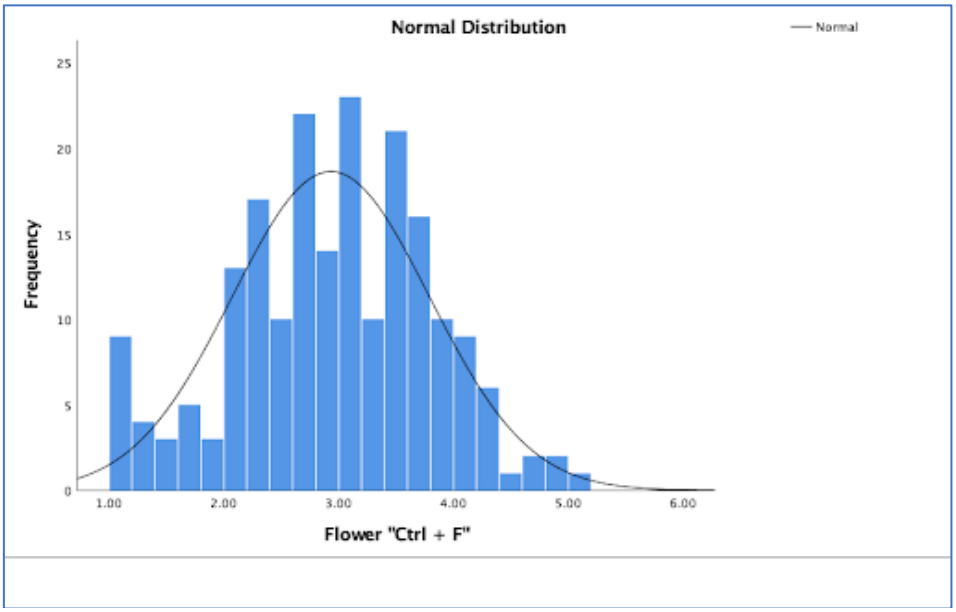
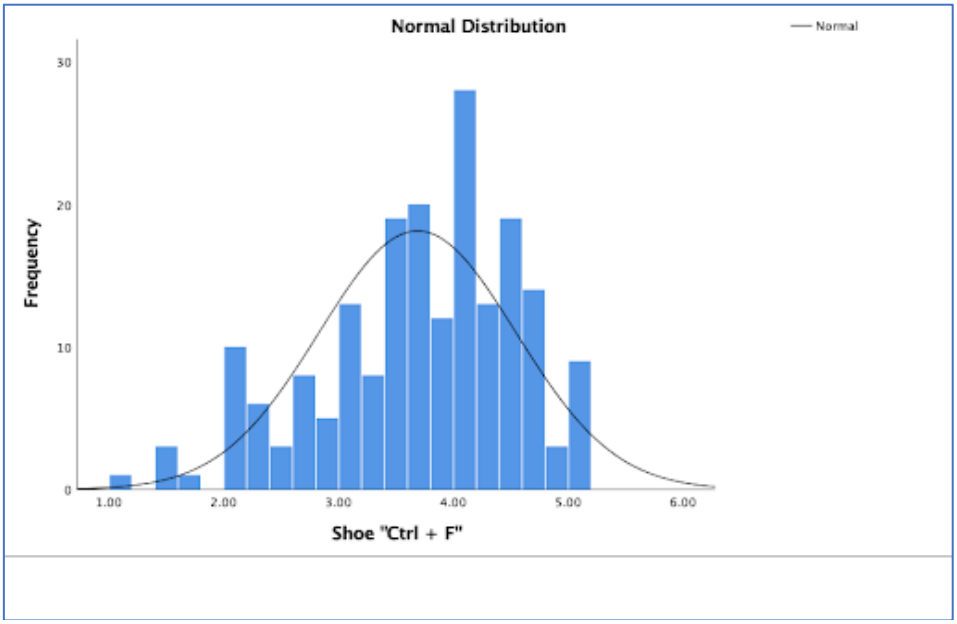


Figure K3: Frequency of Shoe Novelty (Ctrl+F) Ratings



Appendix L

Distribution of Idea Valence

Figure L1: Frequency of Knife Valence Ratings

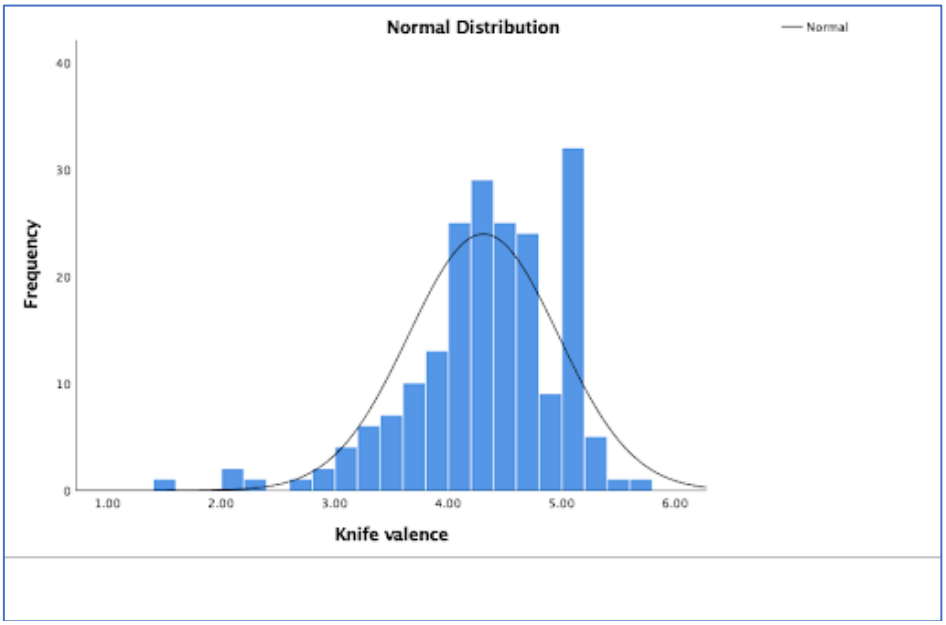


Figure L2: Frequency of Flower Valence Ratings

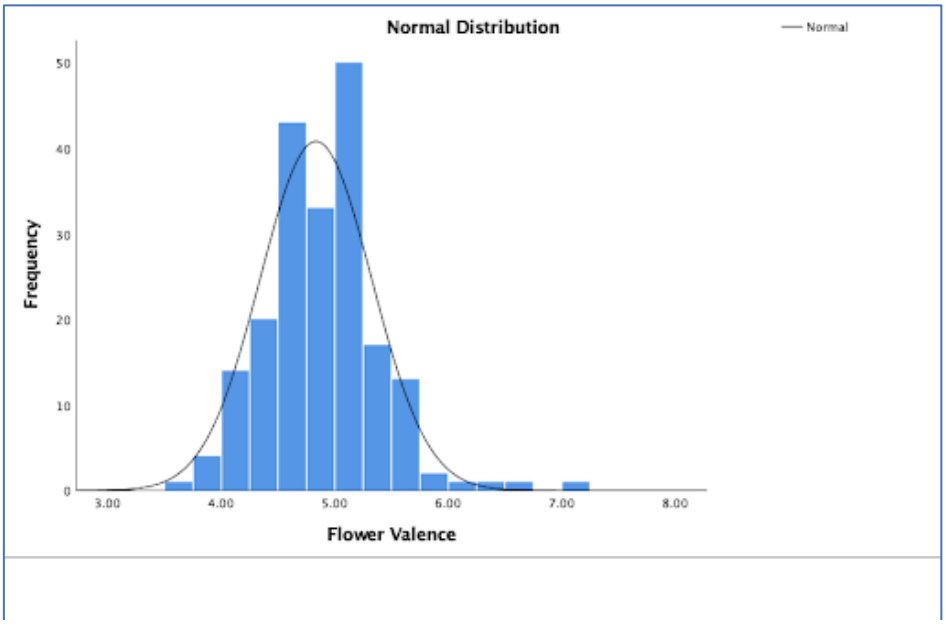
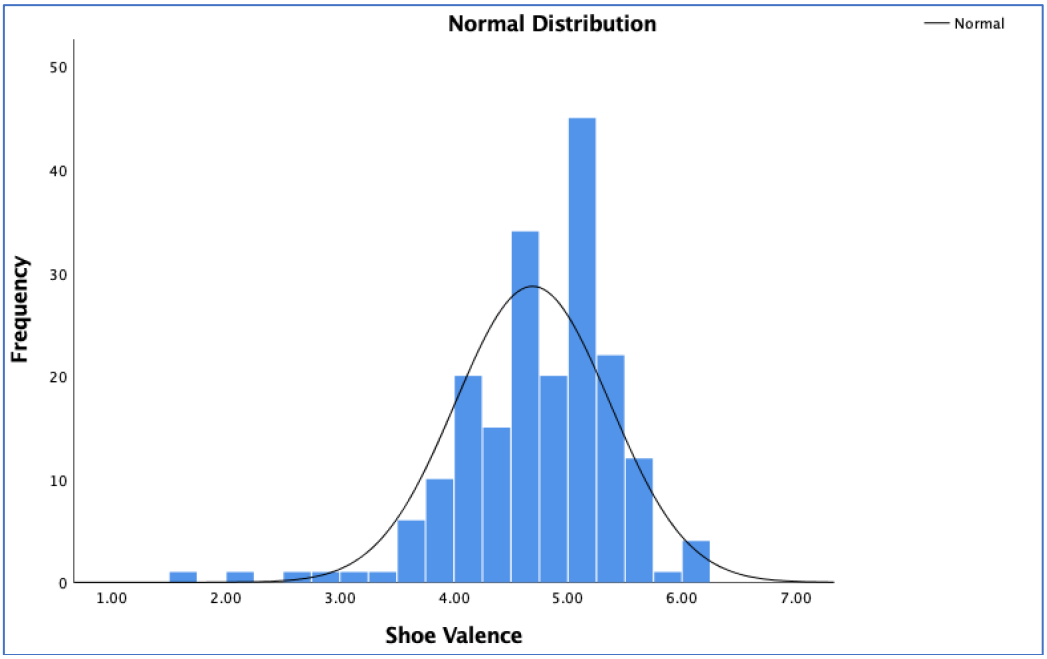


Figure L3: Frequency of Shoe Valence Ratings



Appendix M

Distribution of Idea Novelty(S)*Valence (AUT) Ratings

Figure M1: Frequency of Knife Novelty*Valence Ratings

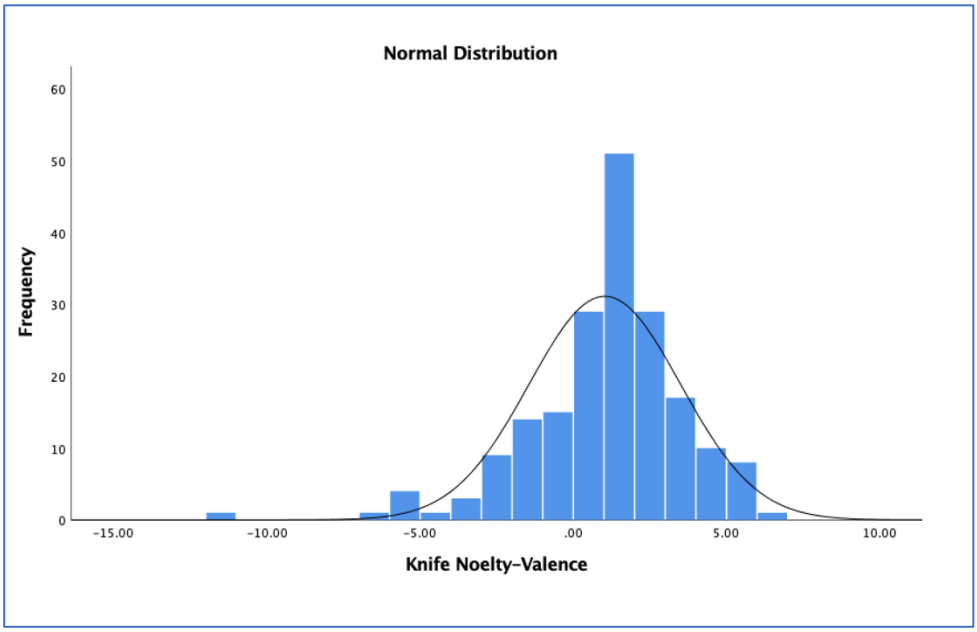


Figure M2: Frequency of Flower Novelty*Valence Ratings

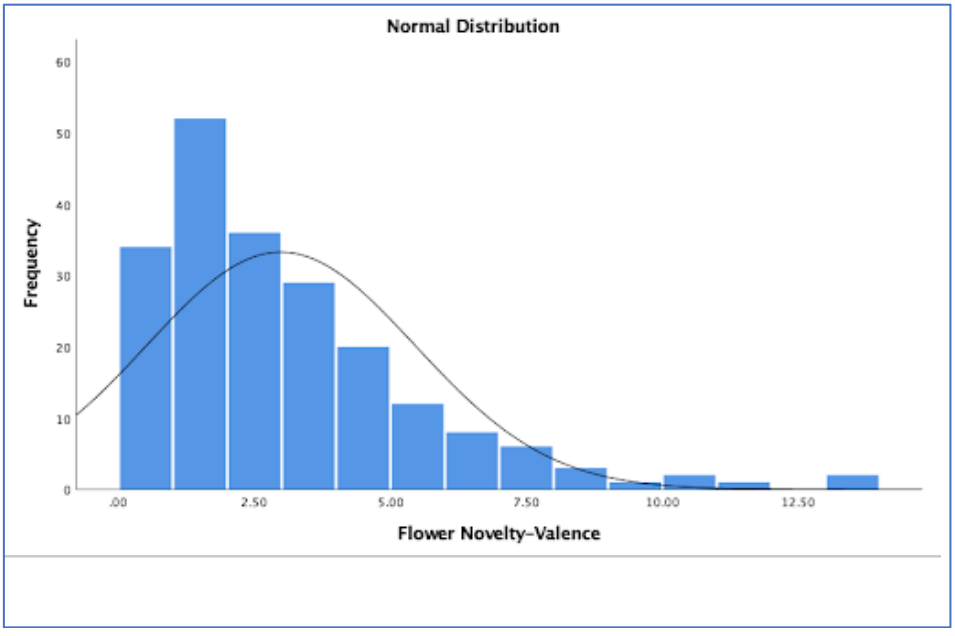
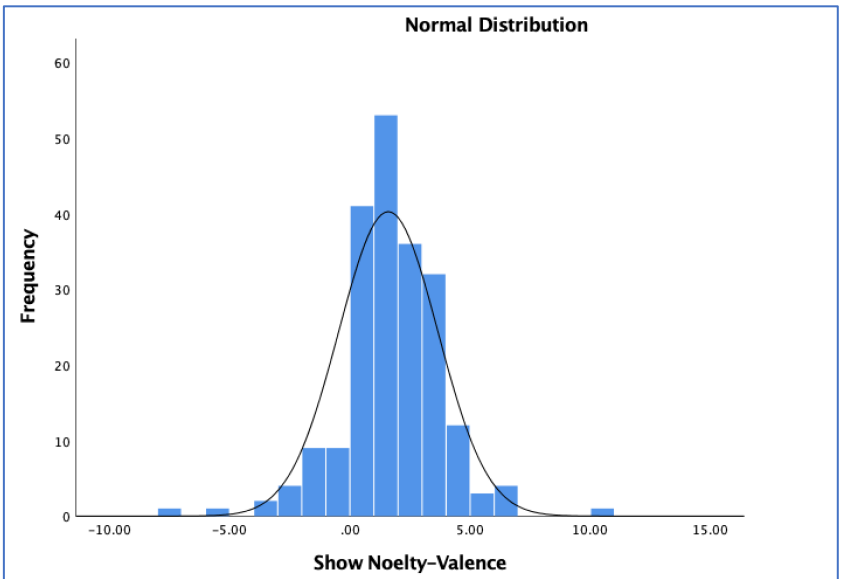


Figure M3: Frequency of Shoe Novelty*Valence Ratings



Appendix N

Distribution of Creative Novelty (S) (Problem-Solving Tasks) Ratings

Figure N1: Frequency of Negative Creativity Novelty Ratings

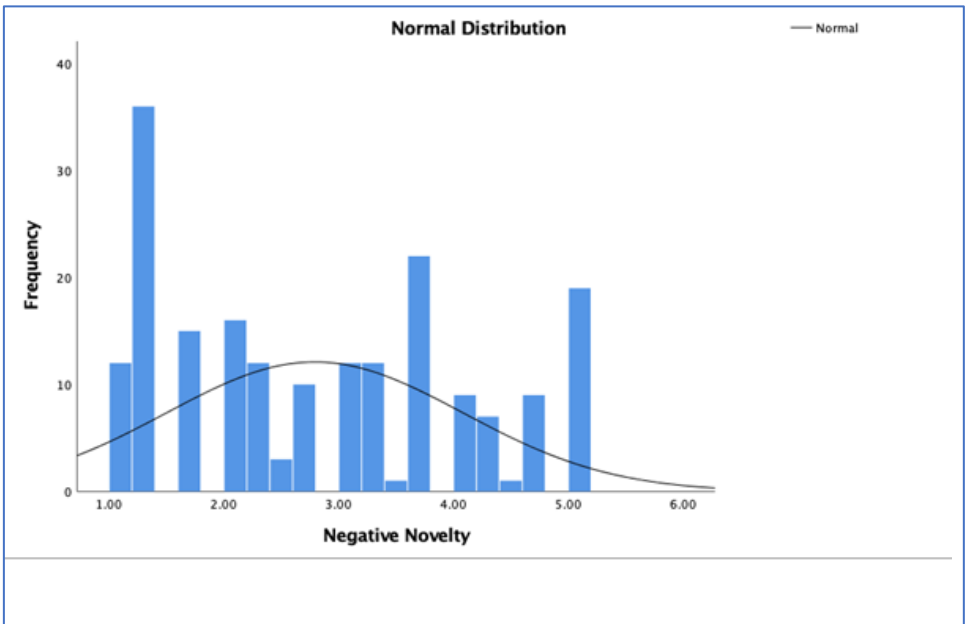
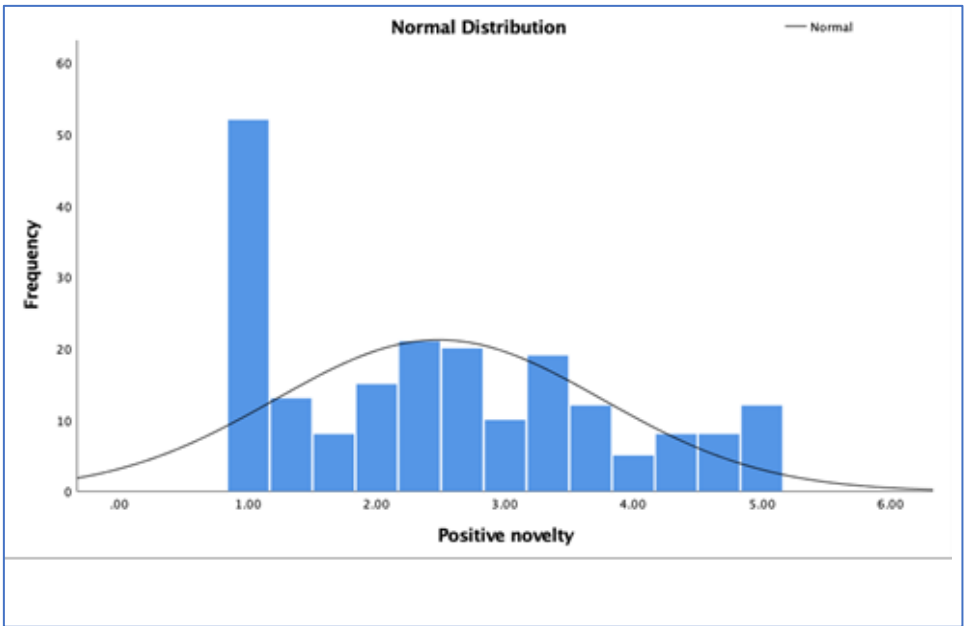


Figure N2: Frequency of Positive Creativity Novelty Ratings



Appendix O

Distribution of Creativity Valence (Problem-Solving Tasks) Ratings

Figure O1: Frequency of Negative Creativity Valence Ratings

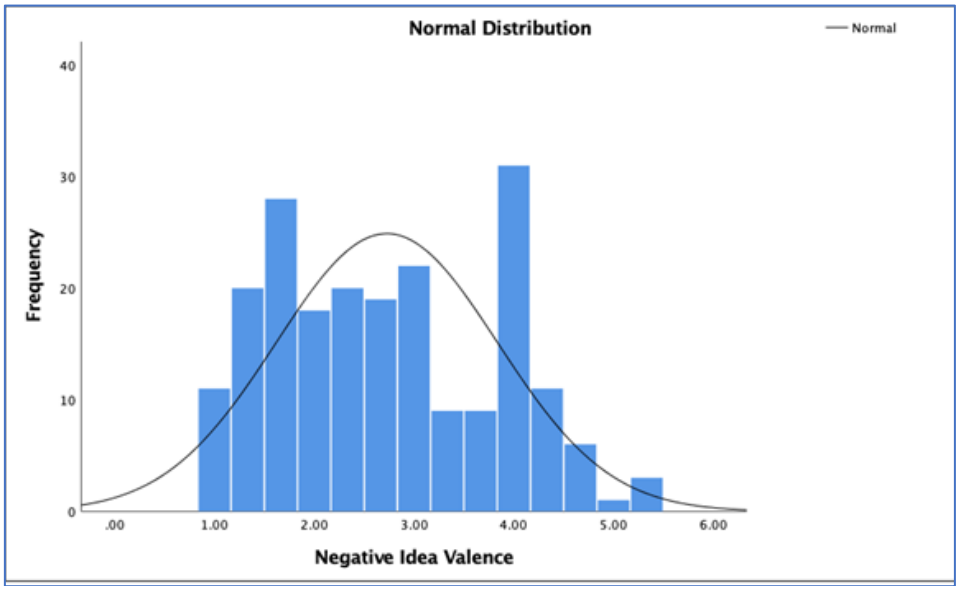
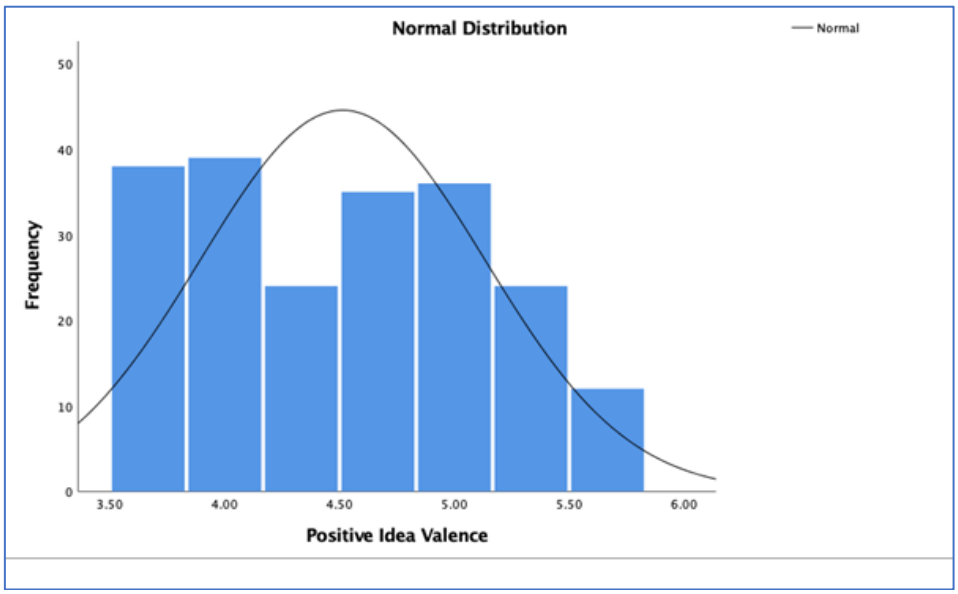


Figure O2: Frequency of Positive Creativity Novelty Ratings



Appendix P

Distribution of Creative Novelty*Valence (S) (Problem-Solving Tasks) Ratings

Figure P1: Frequency of Negative Creativity Novelty*Valence Ratings

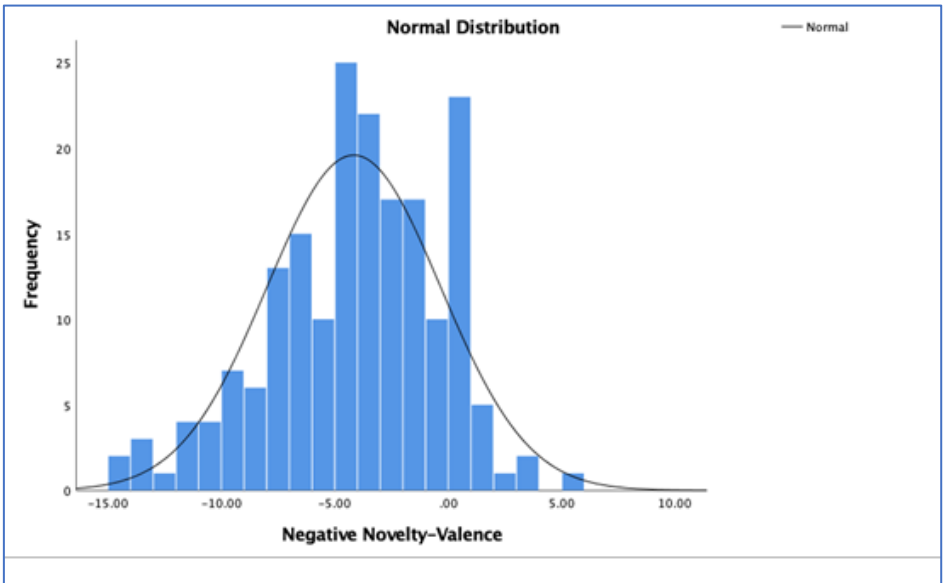


Figure P2: Frequency of Positive Creativity Novelty*Valence Ratings