Profiles of Playful Men and Playful Women

Personality and Humor-Related Attributes

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Research about playfulness in adults has viewed it as something that emanates from personality and other individualized characteristics, and therefore many previous studies adopted a trait approach to predict playfulness, largely ignoring gender differences. The author conducted a facet-level analysis of the so-called big-five personality predictors and of four humor-related attributes and analyzed whether playfulness should be considered individually or compositely. She generated hypotheses from the extant literature and surveyed hundreds of undergraduates to discover characteristics distinctly different between the playfulness of young adult men and women. **Key words**: adult playfulness; gender and play; personality and play

Personality and Humor-Related Attributes

As comprehensive efforts to define play became fraught with frustration and eventually, or so some would argue, proved futile (cf. Gray 2015; Sutton-Smith 1997), attention began to focus on the player. Various lines of research heralded individual differences in characteristics strongly related to playful qualities. For example, Csikszentmihalyi (1975), in his classic studies describing flow experiences, recognized that what appeared to be personality differences could account for the degrees of enjoyment and engagement experienced within the same activities he observed—and across different ones. Csikszentmihalyi (1990) also hypothesized the existence of an autotelic personality trait to describe individuals who find interest and enjoyment in almost everything they do, and he depicted these individuals as apparently able to create enjoyable experiences in the most sterile circumstances. In a different line of research, Deci and Ryan (1985, 2002; Ryan and Deci 2000) posited that indi-

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viduals differ in the degree to which they desire and seek intrinsic rewards and that personality differences, in conjunction with situational factors, explain the motivation behind such behavior. They identified these individual differences in the intrinsic motivation behind diverse activities calling them various autonomy orientations. Weissinger and her colleagues (Weissinger 1985; Weissinger and Bandalos 1995; Weissinger and Iso-Ahola 1984) hypothesized the presence of an intrinsic leisure motivation reflective of various individual desires for internal rewards in leisure pursuits (Weissinger and Bandalos 1995). Mannell (1984) postulated a self-as-entertainment construct and described it as "individual differences in the capacity/ability to fill one's free or discretionary time with activity that is perceived by the individual as personally satisfying and meaningful" (1). Although these conceptions differ in nomenclature and constitution, they hold that individuals vary in their volitional pursuit of enjoyment and its internal rewards, and they emphasize the disposition of players rather than the detached properties of their physical surrounds. To capture these characteristic differences, the term "playfulness" evolved and was defined as "a tendency to approach activities in a non-serious manner for one's own enjoyment" (Glynn and Webster 1992, 85), "the predisposition to frame (or reframe) a situation in such a way as to provide oneself (and possibly others) with amusement, humor, and/or entertainment" (Barnett 2007, 955), and "an inclination to pursue activities with the goal of amusement or fun, with an enthusiastic and in-the-moment attitude" (Van Vleet and Feeney 2015, 637).

As the focus of attention shifted from play to playfulness, scholars began to assess playfulness in its own right. Scales were generated, at first replicating and updating extant measures of playfulness in children (Barnett 1990, 1991a; Lieberman 1977). As researchers came to realize that adult playfulness was qualitatively different from the physical, rough-and-tumble exuberance shown by children, they created new items and instruments. As the number of empirical enquiries about playfulness in adults grew, some researchers identified the salient descriptors that differentiated more playful individuals from less playful ones (Barnett 2007), the correlations between adult playfulness and a variety of other individual characteristics (Barnett 2011, 2011–2012), and the presence of adult playfulness across a variety of contexts such as workplaces (Maxwell et al. 2005; Starbuck and Webster 1993), computer laboratories (Pauli, May, and Gilson 2003; Webster and Martocchio 1992; Woszczynski, Roth, and Segars 2002), marketplaces (Aroean 2012), and language classes (Bell 2012). Testing the construct with young and middle-aged adults provided preliminary evi-

dence that playfulness possessed trait-like properties (Webster 1990; Webster and Martocchio 1992; Yager et al. 1997).

Playfulness and Personality

Research about adult playfulness investigated its relationship to personality, focusing predominantly on the "big five" traits (McCrae and Costa 1987): neuroticism (lacking the capacity to deal effectively with negative emotions); extraversion (the tendency to experience positive moods and be active and dominant in social situations); openness to experience (curiosity, creativity, and intellect); agreeableness (the tendency to engage in prosocial behaviors); and conscientiousness (the tendency to be planful, organized, and responsible) (Caspi, Roberts, and Shiner 2005; McCrae and John 1992). Personality was found to relate strongly to all the measures of adult playfulness with varying amounts of predictive power depending on the trait and playfulness factor, ranging widely from 3 percent to 70 percent (Barnett 2007, 2011–2012; Proyer 2012a, 2017).

Each study found that extraversion was a strong predictor of adult playfulness regardless of the population among university students (Barnett 2011–2012) and adults from their early twenties to their nineties (Mixter 2009; Proyer 2011, 2012b, 2012c, 2017; Proyer and Jehle 2013). Collectively, although extraversion emerged as a significant forecaster of playfulness, so too did almost all of the other NEO traits, although none of them consistently.

The need-for-play scale, for example, also correlated highly with openness (Costa and McCrae 1988), and the openness trait was strongly predictive in several studies (Bateson and Nettle 2014; Mixter 2009) but not in others (Barnett 2011–2012; Proyer 2012b, c; Proyer and Jehle 2013).

Studies of the general adult population also revealed mixed relationships between adult playfulness and the conscientiousness trait: Low ratings on the trait related to playfulness in some (Barnett 2011–2012; Mixter 2009; Proyer 2012b, c, 2017; Proyer and Jehle 2013); High conscientious significantly predicted playfulness in others (Proyer and Jehle 2013); And still others detected no relationship (Barnett 2011–2012; Costa and McCrae 1988).

Some studies found agreeableness largely unrelated to adult playfulness (Barnett 2011–2012; Costa and McCrae 1988; Proyer 2012b), although others found it added significant positive predicting (Mixter 2009; Proyer 2012c). Still others found it differentially related to some playfulness dimensions but not to

others (Mixter 2009; Proyer 2017; Proyer and Jehle 2013).

And finally, emotional stability, the inverse of neuroticism, was also found to be predictive of adult playfulness in some research (Mixter 2009; Proyer 2012b, 2017; Proyer and Jehle 2013), but not in others (Barnett 2011–2012; Costa and McCrae 1988; Proyer 2012c).

Part of the explanation for these divergent results must be method variance, because different measures of playfulness—adult playfulness scale, playfulness scale for young adults, the short measure of adult playfulness—and personality (NEO-PI-R, or the Inventory of Minimal Redundant Scales [Ostendorf and Angleitner 1992], although it is closely related to the NEO) were used. The difference might also result from the variability between populations (university students aged eighteen to twenty-four; adults aged eighteen to eighty), though the trait-level analysis was the more likely culprit. This was demonstrated by Proyer (2017), who found that, among some adults residing in Germany, four measures of adult playfulness contrasted with each other and in their relationships with the big-five traits.

A more precise exploration of the personality-playfulness relationship investigated how the facets within the personality traits might be linked to playfulness, because it could not be presumed that a significant finding at the trait level meant its composite facets were all equally associated. In addition, a facet-level analysis provides a more meticulous and thorough depiction of how playfulness might relate to the characteristics of the individual and provides insight into its nomological framework as well. The use of facet-level analyses, in place of trait-level examinations, has been strongly advocated based on the reductionism of the big five and the many studies that have found significant incremental prediction when facets are used instead of traits (Anglim and Grant 2014; Ashton, Paunonen, and Lee 2014).

Only one study to my knowledge has undertaken research with the facets underlying the big five traits, and it explored relationships with Jackson's (1984) need-for-play subscale from his personality research form rather than any measures specifically designed to capture adult playfulness. In this study with a sample of adults aged twenty-two to ninety, Costa and McCrae (1988) discovered significant positive correlations (although many were small) for five of the six extraversion facets (warmth, gregariousness, assertiveness, excitement-seeking, positive emotion), four openness facets (fantasy, feelings, actions, values), and one neuroticism facet (self-consciousness) with the need-for-play scale (Jackson 1984). In the study described in this article, we hoped to demonstrate the

increased predictive power of conducting a facet-level investigation of the predictors of adult playfulness, going beyond the trait approach that has dominated and muddled the personality-playfulness literature. We predicted that greater explained variance in adult playfulness will be found using personality facets compared to adopting a trait-level exploration (H_1).

In the absence of previous research, we had to speculate about which of the thirty facets would be significantly predictive of adult playfulness, and we had to base these speculations on a construct of playfulness and its component dimensions. As a starting point in descriptions of the personality facets, only one mentions play—the description of the gregariousness facet of the extraversion trait. There, "skilled in play and humor" appears (Costa and McCrae 1992). Thus, we thought it likely that this relationship would be observed, so we hypothesized that the extraversion facet of gregariousness will positively predict adult playfulness (H_2).

Definitions and Dimensions of Adult Playfulness

Other scholars have demarcated adult playfulness by its (hypothesized) constituent components, which they delineate by developing an instrument to assess the presence of playfulness (Barnett 2007; Glynn and Webster 1992, 1993; Proyer 2012a, 2014a, 2017; Proyer and Jehle 2013; Shen, Chick, and Zinn 2014) or by theoretical conjecture (Power 2011). A synthesis of these endeavors defined them all—the combined presence of a positive emotional (jovial, cheerful, happy, lighthearted, optimistic) disposition and an exuberant, energetic quality. This provided us the justification to hypothesize that the extraversion facet of positive emotion will positively predict adult playfulness (H_3) and that the extraversion facet of activity will positively predict adult playfulness (H_4).

Research suggested that spontaneity was another ingredient common to playfulness (Barnett 2007; Glynn and Webster 1992; Power 2011; Proyer 2014a; Shen, Chick, and Zinn 2014). But when we considered the various descriptions they offered for "spontaneous," we found some divergence. Appellations such as "impulsive" and "uninhibited" were sometimes considered to be synonymous (at least in playfulness research) with spontaneity (Barnett 2007; Glynn and Webster 1992; Power 2011), although at other times either they were thought to be different (Proyer and Jehle 2013; Shen, Chick, and Zinn 2014) or they were combined with other playful characteristics (Proyer 2017). Considering these differences,

which may be more nuanced than substantive, we melded them to propose the following hypotheses: the neuroticism facet of impulsivity will positively predict adult playfulness (H_5); the neuroticism facet of self-consciousness will negatively predict adult playfulness (H_6); the conscientiousness facet of deliberation will negatively predict adult playfulness (H_7); and the conscientiousness facet of self-discipline will negatively predict adult playfulness (H_8).

Over half the studies claimed support for a dimension related in some way to creativity, including imagination and fantasy (Power 2011; Proyer 2012a, 2014a; Proyer and Jehle 2013). The relationship between creativity and playfulness has achieved a wealth of attention arguing both for and against its inclusion in our definition of playfulness. Those who advocate for the presence of creativity among its defining qualities do so primarily from three vantage points. They first point to the abundance of studies that have found correlations between creativity in children and playfulness (see reviews by Bateson and Martin 2013; Lieberman 1977; Russ 1993) and the many speculations that play and playfulness lead to enhanced divergent thinking and flexible problem-solving capabilities (Berretta and Privette 1990; Howard-Jones, Taylor, and Sutton 2002; Sutton-Smith 1977). Second, they acknowledge the resemblance between several core characteristics of both creativity and playfulness, such as the companion positive conducive mood state, the generation of new and unconventional ideas, the connection between previously unconnected thoughts, and the requisite presence of fun (Bateson and Martin 2013; Gray 2011, 2013; Isen 2001; Isen, Daubman, and Nowicki 1987; Proyer 2017). And finally, they herald the anecdotal support from the famous scientists, composers, and artists who called playfulness a crucial ingredient in their pursuits (see reviews by Bateson and Martin 2013; Root-Bernstein and Root-Bernstein 2001).

Those who oppose incorporating creativity into a definition of playfulness argue for the crucial distinction between the two constructs. Playfulness, they say, concerns mostly a process and less an outcome, but creativity centers around a product and is typically oriented toward a goal or outcome (Power 2011).

The question whether playfulness leads to creativity, creativity leads to playfulness, or both facilitate each other, is complex. However, considering the literature and studies I have cited that assimilate creativity into their definition of adult playfulness, we decided that facets generally descriptive of creativity might be related—such as openness to unconventional ideas or imagination to a preference for novelty—and we hypothesized that the openness facet of ideas will positively predict adult playfulness (H_9); that the openness facet of fantasy

will positively predict adult playfulness (H_{10}); and that the openness facet of actions will positively predict adult playfulness (H_{11}).

The presence of a core quality common to a sense of humor, joking, acting silly, and fooling around has also formed the nucleus of most conceptualizations of adult play (for a review see Hurley, Dennett, and Adams 2011) and playfulness (for a review see Bateson and Martin 2014). Although this humorousness appears to be widely recognized by both scholars and lay observers, it has proven difficult to define empirically, perhaps because no consensus exists about how humor relates to playfulness. Proyer and Jehle (2013), in their review of existing playfulness measures, found a common humorousness component that widely ranged from "liking nonsense and absurdity" to "doing everything that one does with humor" (813). In a later conceptualization, Proyer (2014a) omitted a distinct humor dimension and instead included "comedic" to describe his whimsical factor along with "lasciviousness, carefreeness, amoral behavior, chaotic, childish, and defiant" (725). Barnett's (2007) identification of four factors that comprise adult playfulness was labeled "comedic" and included the attributes of "clowns around," "jokes/teases," "funny," and "humorous," all of which were the same for both males and females. Glynn and Webster's (1992, 1993) model included a "fun" factor that combined "humorous" and "fun-loving," while Shen, Chick, and Zinn (2014) omitted any elements seemingly related to possessing a humorous quality.

Proyer and his colleagues conducted extensive research exploring the more specific nature of the humor-playfulness connection. In their studies with adults across a broad age range (seventeen to sixty-five), Proyer and Ruch (2011) found that of the twenty-four strengths and virtues positively valued and enabling a good life listed by Peterson and Seligman (2004), humor was the best predictor of general playfulness. Despite the support they found for this relationship, they concluded that "humor and playfulness are best seen as strongly overlapping without being identical" (9). They reached this same conclusion in several subsequent studies that varied the measures of humor and playfulness (Proyer 2014a; Proyer and Jehle 2013). In another effort investigating personality traits and social humor styles, Proyer (2012c) found playfulness significantly predicted by two of three humor dispositions but also found these dispositions, when combined, explained only a small variance in the model. Nevertheless, the results indicated that playful people enjoyed laughing at others and did not fear being laughed at themselves.

We thus sought to incorporate the humor-playfulness association into our study, and in the absence of clear prior findings, we identified humor-related

qualities rather than honing in on any particular element or expressive style. Because one of the big-five facets directly embraced humor, we included our own items that assessed the humor-related qualities of "having a sense of humor," "being funny," "being humorous," and "telling jokes," and we presented them in various idiographic terms. We hypothesized that qualities related to humor ("having a sense of humor," "being funny," "being humorous," "telling jokes") will positively predict adult playfulness (H_{10}).

Patterns of Personality and Adult Playfulness

One of the more interesting questions in assessing personality facets and how they might relate to adult playfulness is the extent to which they might configure together or should instead be regarded separately. Is it the case that the significant facet predictors each foretells a playful person, or rather that a playful person is someone who simultaneously possesses all of the identified personality facets? Is everyone who is gregarious or rates high in positive emotion or appears very impulsive (for example) especially playful? Or rather, is a playful person someone who is gregarious and impulsive and rates high in positive emotion? Although we can surmise that researchers who posited the dimensions of adult playfulness intended them to appear in combination, there has to date been no research addressing this question. Therefore, we also investigated whether the significant personality facet-level predictors are characteristic of adult playfulness, or rather, whether they each can stand alone. We hypothesized that a profile pattern among the predictors will be a superior elucidation of adult playfulness than when considered individually (H_{13}).

Gender Differences in Adult Playfulness

Although many studies have consistently found considerable gender differences in the play (cf. Berenbaum, Martin, and Ruble 2008; Golombock et al. 2008; Martin and Ruble 2009; Ruble, Martin, and Berenbaum 2006) and playfulness (Barnett 1991a, 1991b; Barnett and Kleiber 1982, 1984) of children and in the leisure activities and play of adults (for reviews see Henderson 1996; Henderson and Hickerson 2007; Shaw 1999), there has only been sporadic research about gender differences in adult playfulness. Of the research that has investigated

relationships between playfulness and personality, some studies have omitted testing for sex differences (Proyer 2012a, c; Schaefer and Greenberg 1997; Shen et al. 2014), others have covaried out gender in an effort to eliminate its influence on the variables under scrutiny (Proyer 2012b; Proyer and Ruch 2011), and others have more directly assessed it. Of the latter studies, the results have been mixed, detecting gender differences in individual dimensions and items but not in their underlying factor structure (Barnett 2007; Proyer 2014a; Proyer and Jehle 2013) or playfulness functions (Proyer, 2014b). Barnett (2007) found the same factors underlying adult playfulness but observed differences in four of her fifteen descriptors (cheerfulness, friendliness, and humorousness rated higher among females, while jokes and teases rated higher among males). Proyer (2014a) detected gender differences in four of his five factors, with men scoring higher than women in whimsicality and intellectuality and lower in creative loving and impulsivity (but the same in cheerfulness and engagement) factors. Proyer and Jehle (2013) found gender differences in only one of their five factors (humorousness). Using very similar samples and the same playfulness measure, FitzMedrud (2008) found that females scored higher than males in total playfulness, but the exact opposite was found by Mixter (2009). FitzMedrud also discovered gender differences on some of the subscales as well, where females rated higher for enjoying silliness and informality but not for fun loving, a sense of humor, or whimsicality. Mixter (2009) also found that gender significantly predicted adult playfulness with one scale, the adult playfulness scale of Glynn and Webster (1992), but not with another, the playfulness scale for adults of Schaefer and Greenberg (1997). Using the same playfulness scale, Glynn and Webster (1992) found gender correlated significantly in two of their studies (one positively, the other negatively), but it was unrelated in three others.

Differences between men and women have also been explored in studies investigating correlates and predictors of playfulness with samples of college students. Barnett (2011–2012) investigated relationships between playfulness and personality, motivational orientation, affect, and sense of humor. She found substantive gender differences in some relationships but not in others. Playfulness in men was significantly predicted by two of the big five personality dimensions (high extraversion, low conscientiousness) and by their appreciation of humor, their frequent display of negative affect, and their lack of motivation for tangible rewards. Females who were high in playfulness also tended to be extraverted and unmotivated by tangible rewards, and they made more pronounced displays of both negative and positive affect. We found it interesting that the

personality, affect, and motivation variables combined to explain 68 percent of total playfulness for the men and 93 percent for the women, suggesting perhaps that playfulness in males might be more affected by environmental influences. The study reported even stronger gender differences when the influence of these variables was examined for each playfulness factor. In addition, Barnett (2011) further investigated male-female differences in the effect playfulness had on the leisure activities they chose, why they selected them, and if their decisions were instigated by boredom or challenges. High and low playful men and women were no different in their motivations or activating sources but only in what kinds of activities they pursued. Perhaps not surprisingly, males showed a preference for sports and females for social activities.

The conclusion we are led to adopt from this body of literature is that the question of whether (and where) gender differences exist in adult playfulness remains largely unsettled. In contrast to the playfulness literature, personality researchers have found that gender plays an insignificant role in determining the factor structure and underlying facets in the organization of personality. A wealth of research using the big five personality dimensions and their components has found that, statistically, gender accounts for a trivial variance and that, where differences are found, women possess a little more or less of a facet than men (for reviews see Costa, Terracciano, and McCrae 2001; Feingold 1994; Schmitt et al. 2008). It would thus appear that, should differences be detected between males and females, these differences would be attributable largely to distinctions surrounding playfulness rather than to personality. To explore further the relationship between gender and playfulness, we hypothesized that the profile patterns of adult playfulness will be different for men and women (H_{14}).

Method

Participants and Procedures

The study included 647 volunteer students attending a large public university in the midwestern United States. The sample was fairly even divided by gender (51.5 percent male) and was mostly comprised of juniors (43.8 percent) and sophomores (36.6 percent) with very few freshmen (.9 percent). Students in the study ranged in age from eighteen to twenty-five, or those called "emerging adults" by Arnett (2000), with a mean age of 20.43 years (SD = .9415). The majority of sample members self-identified as white non-Hispanic (70.5 percent), and there

were fewer black non-Hispanic (14.7 percent), Latino Hispanic (6.5 percent) or Asian Pacific islanders (7.4 percent). Most students were employed at least part-time while in school (63.4 percent; 35.2 percent full-time) and were not married or engaged (97.2 percent).

Participants had responded to an email soliciting undergraduate students to complete the measures in the study within the following month. We distributed the email to six general education classes (in the social and behavioral sciences), each with an enrollment of two hundred students or more. Students attended one of twenty-three sessions where they received, completed, and returned all written materials. We instructed them not to record their name or other specific identifying information (such as student ID number or social security number) on any of the instruments. The same individual gave out the same set of instructions at all sessions, and the materials took between twenty and thirty minutes to complete. Volunteer participants received ten dollars for their time. Within two weeks, 712 students responded positively to the initial mailing, and 651 attended a session and completed and returned the packet of materials. We subsequently discarded four of these because they were incomplete.

Measures

Playfulness and Humor-Related Characteristics

In the absence of a widely accepted factorial model and measurement instrument, we used three items employed in previous research (Barnett 2007) that had demonstrated high reliability and closely resembled items on the Short Measure for Adult Playfulness (Proyer 2012b) to assess self-perceived playfulness. We asked students to respond to the following questions: "How playful do you think you are?" "How playful do you consider yourself to be?" "How playful do you think others think you are?" We employed a ten-point Likert-type scale with anchor points of "not at all" and "very much." We also provided a "don't-know" space as an option. The first question appeared among a set of twelve demographic questions we asked participants on the final page of the packet of materials. We interspersed the two other questions among forty-four others, some assessing self-descriptors ("How disciplined do you consider yourself to be?" "How friendly do you think you are?") that used the same response format. Responses to the three playfulness items were highly correlated ($r = .96$; $p < .0001$), and we used the mean of the items in our analyses.

In addition to playfulness measures, we also interspersed four similarly worded items among the forty-four descriptors designed to measure humor-related characteristics of individuals. These were: "How funny do you think you are?" "How humorous do you think you are?" "How much do you like to tell jokes?" "How much of a sense of humor do you think you have?" We also included these four humor-related questions on the demographic page as a reliability check to examine the consistency of participants' responses. Replies to all four questions using the same ten-point Likert scale ("not at all" to "very much") and "don't know" option. After finding highly significant positive correlations indicating participants replied to the two appearances for each item virtually identically (r_{funny} = .96, $r_{humorous}$ = .95, r_{joking} = .95, $r_{sense\ of\ humor}$ = .93, all $p < .0001$), we used the mean of each of the four humor-related items in our analyses. The page containing the forty-four descriptor questions appeared first in the packet that we asked respondents to complete, followed by the personality measure and then by the demographic items. We presumed that respondents would be less likely to recall their answers to similar playfulness and humor questions if we placed the rather lengthy personality inventory between them.

Personality

We measured personality using the NEO-PI-R (Costa and McCrae 1992) designed to assess the six narrow facets comprising each of the five broad personality domains of neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness (see figure 1). The NEO-PI-R consists of 240 items (eight items per facet) to which participants respond on a five-point Likert-type scale with the response choices of "strongly agree," "agree," "neither agree nor disagree," "disagree," and "strongly disagree." NEO-PI-R facet scales contribute to define the five factors but they also carry specific variance that contributes to their discriminant validity (Costa and McCrae 1995). Costa and McCrae (1992) reported coefficient alphas of the thirty-facet scales ranging from 0.56 to 0.81 and of the five broad domains ranging from 0.86 to 0.92. In the study described in this article, we used summed scores for the thirty facets in all our analyses. In this study, Cronbach's alphas for the big-five dimensions ranged from .84 to .92 and Cronbach's alphas for the facets ranged from .68 to .89.

Demographic Information

We also asked participants in the study to provide demographic information. The final page in the packet of materials posed fourteen questions intended to

Figure 1. Descriptions of Big Five personality facets[1]

Facet	*Description*
Neuroticism	
Anxiety	Tendency to feel apprehensive, nervous, tense and to worry
Hostility	Tendency to feel and experience anger, frustration and bitterness
Depression	Tendency towards feelings of guilt, sadness, hopelessness and loneliness
Self-conscious	Tendency towards shame, embarrassment, shyness and social anxiety
Impulsive	Tendency to act on urges and not to delay gratification
Vulnerable	Susceptibility and inability to cope with stress leading to feelings of panic
Extraversion	
Warmth	Interest, affection and friendliness towards others
Gregarious	Tendency to prefer the company of others
Assertiveness	Tendency to display social ascendency and forcefulness in interactions
Activity	Preference for increased pace of living
Excitement-seeking	Tendency to seek environmental stimulation
Positive emotion	Tendency to experience positive emotions such as joy and happiness
Openness to Experience	
Fantasy	Receptivity to imagination and fantasy
Aesthetics	Tendency to show deep appreciation for art and beauty
Feelings	Receptivity to inner feelings and emotions
Actions	Tendency to seek new experiences (places, foods etc.)
Ideas	Intellectual curiosity, willingness to consider new unconventional ideas
Values	Willingness to examine one's own values and those of authority figures
Agreeableness	
Trust	Tendency to believe in good intentions of others
Straightforward	Tendency to be frank and sincere in expression and communication
Altruism	An active concern for others
Compliance	Tendency to defer to others during interpersonal conflict

Modesty	Tendency to play down own achievements
Tender-mindedness	Tendency to show sympathy toward others
Conscientiousness	
Competence	Belief in one's own self efficacy (sensible, prudent, capable, effective)
Order	Tendency to display organized behaviors
Dutifulness	Belief in the importance of fulfilling obligations and adhering to one's own ethical principles
Achievement	Desire for personal achievement and sense of direction through hard work
Self-discipline	Capacity to begin and complete tasks without distraction
Deliberation	Tendency to think things through before acting

[1] Adapted from Costa and McCrae (1992)

gather information about their gender (male or female), year in school (freshman, sophomore, junior, senior), race or ethnicity (Asian Pacific islander, black non-Hispanic, Latino Hispanic, white non-Hispanic, other), marital status (single, engaged, married, divorced, other), employment status (working full-time, working part-time, do not work), hours typically worked per week, major field of study, and number of semesters in their majors.

Data Analysis

Hierarchical Regression Analysis

We initially employed a hierarchical regression analysis to examine adult playfulness (mean score across the three playfulness items) on the five traits for the sample as well as individually for male and female participants. The first block in the model included the covariates of minority status (minority = 1, non-Hispanic white = 0) and year in school. The second block consisted of the means for the five traits of neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness. We used the results of this hierarchical regression analysis to test the first hypothesis. Using the same playfulness dependent variable, we input the thirty-facet means comprising the NEO-PI-R

as the second block in the hierarchical regression, and we added a third block that consisted of the humor-related mean scores. We applied the findings from this regression to test the second through twelfth (H_2–H_{12}) hypotheses. We first analyzed the sample as a whole and then separately for men and women to determine whether differences in gender predicted playfulness (H_{14}). Incremental validity was assessed in both regression analyses by determining if explained variance (R^2) increased significantly when the second block was added to the model (Hunsley and Meyer 2003).

Criterion Profile Analyses

The hierarchical multiple regression analyses we have described assessed the comparative effects of the facets and humor-related items as predictors of playfulness, but they did not investigate how the facets may be configured according to a particular pattern. To detect the presence of a pattern among the predictors (H_{13}), we conducted a criterion profile analysis (CPA) (Davison and Davenport 2002; Davison, Chang, and Davenport 2014). In brief, CPA generates a predictive profile for both the level component, representing the mean (overall elevation) of the predictor facet scores, and the pattern component, defined as the vector containing the deviation of predictor scores (from the mean score) based on the regression coefficients. A comparison of explained variance in the hierarchical regression of each component to the variation when both components are considered together demonstrates the sizes of the pattern and level effects. The significance of each effect, over and above that of the other, reveals the contribution of either the pattern of predictors or the individual predictors (level) in explaining adult playfulness. Davison and Davenport (2002) articulated the advantages of this method for identifying patterns of predictor scores over more conventional methods such as multidimensional scaling, cluster analysis, or modal profile analysis. Hence, in our study, we conducted a profile analysis for males and females separately, in accordance with H_{13}, to explore the unique versus concordant relationships among the significant predictors.

Results

Descriptives

Initial inspection of the data yielded estimates of skewedness and kurtosis for adult playfulness that fell between +1 and -1, suggesting normality of the

criterion data (George and Mallery 2010). We conducted Shapiro-Wilk and Kolmogorov-Smirnov tests to determine the departure from normality of the data, and we found both to be nonsignificant ($p > .05$), thus allowing us to use parametric statistical procedures and untransformed data (Field 2009). We also conducted diagnostic tests to determine how well the regression model fit the data. We examined the residuals of the outcome variables and the regression slopes to detect specification errors and influential observations. We ran analyses of studentized residuals to detect outliers that fell three standard deviations (*SD*s) outside the mean. In an effort to determine if these students were influencing the slope, we computed Cook's *D* values. We detected no influential outliers.

Our correlational analysis explored associations between the adult playfulness measure, the facets of the NEO-PI-R, and the four humor-related items. The means, standard deviations, and correlations are presented in figure 2 separately for males and females. The direction and magnitude of the correlations were as we expected. For both men and women, the facets appeared to correlate higher within traits than across traits, as we expected, and were within the published range in validation studies with this population (Costa and McCrae 1992, 1995). Correlations for both sexes between adult playfulness and the facets proved largely positive within the extraversion, openness to experience, and agreeableness traits, but mostly negative for neuroticism and conscientiousness traits. Playfulness also showed significant positive correlations with all humor-related items, ranging from .66 to .27 for males and from .45 to .28 for females; highest correlations were with the "funny" item for both sexes. The humor-related items all correlated significantly with each other for male (+.42 to +.77) and female (+.31 to +.72) participants in the study.

Hierarchical Regression Analyses

Trait-level Analyses

We conducted the hierarchical linear regression with the demographic covariates of minority status and year in school as the first block and the big five traits of neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness as the second block. We computed the regression for the sample as a whole and then separately for males and females. In all regressions, we used the adult playfulness mean score as the criterion variable.

Figure 3 displays the results of these three hierarchical regression analyses.

Figure 2. Correlations[1], means, and standard deviations for NEO facets[2], playfulness, and humor-related items by sex[3]

	N1	N2	N3	N4	N5	N6	E1	E2	E3	E4	E5	E6	O1	O2	O3	O4	O5	O6	A1	A2	A3	A4	A5	A6	C1	C2	C3
N1	---	20[a]	43[a]	32[a]	13[b]	31[a]	-00	14[b]	08	12	-08	-06	25[a]	-02	43[a]	19[a]	06	08	-02	21[a]	13[b]	02	23[a]	22[a]	08	28[a]	-04
N2	35[a]	---	24[a]	18[a]	50[a]	47[a]	-11	-08	21[a]	26[a]	15[a]	05	25[a]	18[a]	40[a]	42[a]	21[a]	18[a]	-10	-01	-03	-14[b]	21[a]	12	09	14[a]	01
N3	45[a]	47[a]	---	55[a]	52[a]	53[a]	04	08	12[b]	03	20[a]	-00	30[a]	21[a]	45[a]	32[a]	17[a]	08	-22[a]	09	20[a]	14[b]	49[a]	16[a]	-02	07	-14[a]
N4	26[a]	27[a]	30[a]	---	42[a]	44[a]	-08	-04	-03	-01	01	-10	11	27[a]	19[a]	31[a]	31[a]	17[a]	-14[b]	-09	-04	-05	47[a]	11	13[b]	19[a]	-06
N5	35[a]	28[a]	44[a]	35[a]	---	47[a]	-10	-00	31[a]	20[a]	41[a]	05	22[a]	13[b]	35[a]	19[a]	41[a]	09	-18[a]	-04	14[b]	-12[b]	29[a]	15[a]	20[a]	12	-16[a]
N6	25[a]	12[b]	21[a]	20[a]	28[a]	---	04	00	33[a]	26[a]	19[a]	14[b]	43[a]	36[a]	47[a]	49[a]	39[a]	26[a]	-07	14[a]	23[a]	13[b]	46[a]	30[a]	14[b]	27[a]	01
E1	-13[b]	-39[a]	-26[a]	-15[a]	14[b]	06	---	59[a]	34[a]	39[a]	17[a]	56[a]	21[a]	12[b]	45[a]	07	27[a]	36[a]	50[a]	29[a]	57[a]	39[a]	17[a]	44[a]	11	14[b]	28[a]
E2	-03	-08	-11	-17[a]	20[a]	-17[a]	41[a]	---	27[a]	25[a]	26[a]	44[a]	04	-05	26[a]	04	11	38[a]	30[a]	20[a]	36[a]	29[a]	07	17[a]	-06	-01	-01
E3	06	01	-07	-11	27[a]	21[a]	52[a]	62[a]	---	50[a]	29[a]	40[a]	24[a]	26[a]	49[a]	27[a]	56[a]	11	18[a]	30[a]	34[a]	17[a]	19[a]	41[a]	43[a]	28[a]	19[a]
E4	09	01	-01	09	19[a]	34[a]	37[a]	35[a]	46[a]	---	33[a]	59[a]	35[a]	29[a]	49[a]	36[a]	37[a]	46[a]	31[a]	17[a]	43[a]	24[a]	05	46[a]	36[a]	29[a]	33[a]
E5	03	-07	-12	-11	19[a]	13[b]	50[a]	63[a]	59[a]	53[a]	---	19[a]	30[a]	22[a]	18[a]	25[a]	34[a]	30[a]	-03	14[b]	28[a]	05	-03	24[a]	11	03	-02
E6	08	-05	-15[a]	-08	27[a]	09	51[a]	42[a]	45[a]	32[a]	51[a]	---	38[a]	05	33[a]	19[a]	33[a]	51[a]	53[a]	19[a]	43[a]	46[a]	18[a]	42[a]	11	14[b]	23[a]
O1	23[a]	18[a]	23[a]	03	33[a]	45[a]	05	23[a]	16[a]	18[a]	19[a]	30[a]	---	54[a]	40[a]	34[a]	50[a]	40[a]	02	20[a]	41[a]	26[a]	36[a]	44[a]	15[a]	29[a]	24[a]
O2	06	10	01	26[a]	14[a]	-03	24[a]	03	03	22[a]	13[b]	33[a]	14[a]	---	23[a]	39[a]	55[a]	28[a]	-14[a]	06	17[a]	10	25[a]	26[a]	26[a]	18[a]	22[a]
O3	12	-03	06	09	28[a]	16[a]	35[a]	21[a]	26[a]	33[a]	26[a]	41[a]	27[a]	32[a]	---	34[a]	35[a]	34[a]	23[a]	39[a]	47[a]	23[a]	33[a]	44[a]	28[a]	37[a]	23[a]
O4	21[a]	03	06	06	25[a]	37[a]	18[a]	39[a]	39[a]	55[a]	41[a]	25[a]	37[a]	04	20[a]	---	37[a]	49[a]	-03	04	05	01	28[a]	38[a]	20[a]	33[a]	03
O5	20[a]	03	01	06	33[a]	27[a]	09	20[a]	23[a]	26[a]	34[a]	49[a]	33[a]	37[a]	29[a]	29[a]	---	35[a]	03	20[a]	23[a]	11	29[a]	45[a]	35[a]	32[a]	11
O6	29[a]	-13[b]	-07	18[a]	35[a]	29[a]	35[a]	17[a]	32[a]	19[a]	29[a]	38[a]	25[a]	32[a]	43[a]	35[a]	44[a]	---	34[a]	14[b]	42[a]	25[a]	21[a]	51[a]	19[a]	30[a]	27[a]
A1	-01	-14[b]	-09	13[b]	17[a]	15[a]	43[a]	26[a]	34[a]	32[a]	23[a]	26[a]	25[a]	13[b]	20[a]	31[a]	11	29[a]	---	17[a]	31[a]	27[a]	08	30[a]	-10	04	20[a]
A2	14[a]	03	-08	28[a]	25[a]	23[a]	06	-08	05	14[a]	04	12[b]	19[a]	17[a]	00	25[a]	39[a]	22[a]	24[a]	---	32[a]	27[a]	20[a]	19[a]	15[a]	11	03
A3	01	-14[b]	-06	-04	-01	01	33[a]	25[a]	21[a]	22[a]	37[a]	35[a]	15[a]	19[a]	20[a]	17[a]	22[a]	19[a]	23[a]	01	---	50[a]	28[a]	51[a]	33[a]	31[a]	37[a]
A4	03	-05	05	32[a]	28[a]	13[b]	18[a]	25[a]	17[a]	21[a]	32[a]	40[a]	31[a]	32[a]	05	26[a]	37[a]	06	33[a]	28[a]	18[a]	---	38[a]	27[a]	-11	02	13[b]
A5	24[a]	16[a]	23[a]	23[a]	28[a]	12[b]	03	-07	05	06	-07	22[a]	20[a]	11	26[a]	17[a]	30[a]	29[a]	26[a]	39[a]	28[a]	29[a]	---	19[a]	11	20[a]	05
A6	01	-06	-21[a]	14[a]	13[b]	17[a]	36[a]	04	14[a]	17[a]	21[a]	27[a]	13[b]	39[a]	37[a]	15[a]	27[a]	55[a]	38[a]	23[a]	23[a]	18[a]	27[a]	---	30[a]	40[a]	40[a]
C1	-16[a]	-32[a]	-32[a]	-24[a]	-07	01	53[a]	30[a]	32[a]	47[a]	33[a]	32[a]	-01	25[a]	27[a]	15[a]	08	11	27[a]	-08	33[a]	22[a]	03	31[a]	---	65[a]	49[a]
C2	09	-04	-03	11	33[a]	29[a]	28[a]	11	29[a]	33[a]	27[a]	32[a]	22[a]	23[a]	30[a]	47[a]	22[a]	38[a]	25[a]	31[a]	12[b]	30[a]	34[a]	34[a]	27[a]	---	39[a]
C3	-17[a]	-11	-29[a]	-12	-05	07	39[a]	11	26[a]	26[a]	-04	24[a]	01	17[a]	09	13[b]	08	02	31[a]	12[b]	23[a]	30[a]	23[a]	40[a]	64[a]	36[a]	---
C4	02	-11	-20[a]	-11	00	03	39[a]	30[a]	44[a]	36[a]	43[a]	40[a]	-05	23[a]	16[a]	23[a]	18[a]	21[a]	32[a]	06	21[a]	26[a]	00	22[a]	50[a]	31[a]	51[a]
C5	-09	-09	-29[a]	04	11	17[a]	29[a]	21[a]	40[a]	41[a]	25[a]	28[a]	12[b]	20[a]	16[a]	33[a]	23[a]	25[a]	43[a]	36[a]	20[a]	31[a]	21[a]	28[a]	36[a]	50[a]	53[a]
C6	-07	-06	-15[a]	18[a]	-08	16[a]	15[a]	01	-01	12	06	09	05	28[a]	06	20[a]	32[a]	11	14[b]	38[a]	11	27[a]	05	36[a]	21[a]	14[a]	35[a]
JO	12	06	01	06	19[a]	06	07	23[a]	17[a]	27[a]	27[a]	18[a]	01	-11	01	04	14[b]	04	00	-22[a]	09	13[b]	-03	03	05	-08	-07
CL	-03	14[a]	03	08	13[b]	06	15[a]	44[a]	36[a]	33[a]	39[a]	23[a]	-08	-09	-09	19[a]	06	-00	08	-20[a]	08	07	-07	-01	02	-09	-07

FU	19	-11	-13[b]	-07	-10	08	06	22[a]	14[a]	19[a]	19[a]	09	-08	-19[a]	-02	-02	-01	-01	-00	-20[a]	00	04	-22[a]	-09	-04	-22[a]	-25[a]
HU	11	-12[b]	-11	05	-02	-02	23[a]	17[a]	14[a]	23[a]	22[a]	20[a]	-02	10	05	-05	12	02	10	-17[a]	15[a]	17[a]	-10	12[b]	09	-23[a]	-07
SH	05	-09	-01	14[a]	21[a]	29[a]	10	18[a]	18[a]	43[a]	24[a]	25[a]	29[a]	00	16[a]	26[a]	30[a]	18[a]	17[a]	11	01	31[a]	-04	13[b]	-02	-06	-11
PF	01	10	01	02	18[a]	17[a]	25[a]	40[a]	31[a]	45[a]	44[a]	31[a]	04	07	12[b]	14[a]	15[a]	07	15[a]	-03	04	12[b]	-10	01	10	04	18[a]

	C4	C5	C6	JO	CL	FU	HU	SH	PF	FEMALES (N = 311) *MN*	*SD*	MALES (N = 324) *MN*	*SD*
N1	14	20	29	14	-02	15	17	18	01	2.95	.58	2.72	.46
N2	20	-03	23	-05	06	-09	-05	05	-04	2.71	.73	2.60	.51
N3	-00	-03	11	17	14	06	05	04	12	2.73	.62	2.66	.55
N4	03	-06	13	11	02	13	03	05	-03	2.66	.52	2.72	.54
N5	-14	-08	07	15	01	05	03	04	03	2.90	.54	2.82	.53
N6	26	11	31	15	24	24	25	29	03	2.40	.62	2.35	.57
E1	34	30	07	18	10	-04	08	02	28[a]	3.77	.53	3.62	.63
E2	-03	07	-16	26	07	-09	06	05	18[a]	3.17	.52	3.12	.59
E3	42	34	26	23	-02	16	18	22	02	2.89	.56	2.91	.63
E4	54	41	26	20	18	15	12	21	27[a]	3.00	.46	2.95	.52
E5	08	05	-11	22	17	-06	04	10	10	3.65	.45	3.61	.53
E6	40	30	12	33	35	18	27	28	46[a]	3.42	.54	3.27	.57
O1	28	34	29	21	26	18	27	33	17[a]	3.01	.65	2.86	.51
O2	20	27	16	07	-01	06	12	09	-02	3.02	.67	3.14	.51
O3	48	22	35	16	12	01	16	04	18[a]	3.42	.58	3.26	.48
O4	20	21	28	17	39	-03	17	15	31[a]	2.58	.54	2.60	.57
O5	26	23	14	28	12	18	28	21	15[a]	3.03	.66	3.26	.57
O6	32	31	08	35	36	18	37	33	30[a]	2.95	.50	2.92	.51
A1	25	17	-08	19	11	01	01	12	26[a]	3.03	.46	3.07	.44
A2	19	32	13	15	06	02	13	09	13[b]	2.58	.84	2.42	.59
A3	47	49	27	25	05	07	16	17	22[a]	3.68	.52	3.59	.81
A4	20	16	08	49	22	29	33	29	17[a]	2.89	.52	2.89	.54
A5	23	18	36	18	12	04	13	13	07	2.93	.50	2.90	.52
A6	58	49	39	41	24	31	33	32	36[a]	3.23	.43	3.19	.45
C1	61	69	58	-09	-20	-09	02	-15	-09	3.32	.47	3.30	.50
C2	52	58	62	-06	-02	10	16	-06	-03	2.88	.67	2.90	.57
C3	61	52	43	02	-05	-04	00	-09	-06	3.50	.51	3.48	.47
C4	---	64	67	02	-06	09	12	09	07	3.32	.61	3.29	.59

C5	48	---	58	05	-05	03	10	11	12	3.08	.54	3.10	.47
C6	15	29	---	-06	-08	-03	08	-04	-04	3.07	.52	3.03	.47
JO	-03	-02	-09	---	51	53	71	61	42[a]	7.71	1.83	7.87	1.57
CL	02	-08	-11	57	---	32	55	44	66[a]	6.79	2.32	7.27	2.09
FU	01	-07	-27	63	46	---	72	69	27[a]	7.97	1.40	8.14	1.41
HU	05	03	-01	67	48	73	---	74	42[a]	8.11	1.58	8.16	1.63
SH	03	18	11	48	37	54	60	---	31[a]	8.47	1.15	8.58	1.43
PF	33[a]	19[a]	04	29[a]	45[a]	32[a]	28[a]	29[a]	---	8.06	1.26	7.64	1.36

[1] decimal points omitted

[2] N1 = Anxiety, N2 = Hostility, N3 = Depression, N4 = Self-conscious, N5 = Impulsive, N6 = Vulnerable, E1 = Warmth, E2 = Gregarious, E3 = Assertive, E4 = Activity, E5 = Excitement-seeking, E6 = Positive Emotion, O1 = Fantasy, O2 = Aesthetics, O3 = Feelings, O4 = Actions, O5 = Ideas, O6 = Values, A1 = Trust, A2 = Straightforward, A3 = Altruism, A4 = Compliance, A5 = Modesty, A6 = Tender-minded, C1 = Competence, C2 = Order, C3 = Dutiful, C4 = Achievement, C5 = Self-discipline, C6 = Deliberation, JO = joking, CL = clowning, FU = funny, HU = humorous, SH = sense of humor

[3] correlations for females in upper triangle, males in lower triangle

[a] $p < .001$

[b] $p < .01$

In the first block, we found neither of the covariates to contribute, and collectively they explained only a small variance for the sample (.91 percent) and for male (.79 percent) and female (1.08 percent) participants. The personality traits collectively contributed 21.30 percent to the total variance for the sample, and when we considered gender, the explained variance was higher for males (30.40 percent) but lower for females (18.70 percent). For the sample, only extraversion emerged as a significant predictor of adult playfulness, and when we conducted the analyses separately, we found all the NEO traits to be significant and all but extraversion were in a different direction. For males, adult playfulness was significantly predicted by high neuroticism ($p < .014$) and extraversion ($p < .000$), and by lower conscientiousness ($p < .024$), openness ($p < .012$), and agreeableness ($p < .01$). In contrast, significant predictors of playfulness in females were high extraversion ($p < .000$) and agreeableness ($p < .012$), and low neuroticism ($p < .011$), conscientiousness ($p < .013$), and openness ($p < .036$). We concluded that analyses of adult playfulness must consider gender differences and that analyses conducted using samples conceals important distinctions.

Facet-Level Analyses

We then calculated hierarchical regressions replacing the five NEO traits with the thirty facets for the sample (figure 4) and adding a third block for the four

Figure 3. Summary of hierarchical regression analyses with personality traits predicting playfulness for the sample, males, and females

	SAMPLE (N = 635)			MALES (N = 324)			FEMALES (N = 311)		
Step	β	ΔR^2	F_{cha} (5, 629)	β	ΔR^2	F_{cha} (5, 318)	β	ΔR^2	F_{cha} (5, 305)
1 Demographics		.0091	.0248		.0079	.0142		.0108	.0348
Minority status	.000			.000			.000		
Year in school	-.000			-.000			-.000		
2 Traits		.2130	34.1440[a]		.3040	27.7540[a]		.1870	14.035[a]
Neuroticism	-.019			.129[b]			-.158[b]		
Extraversion	.528[a]			.594[a]			.290[a]		
Openness to Experience	-.056			-.170[b]			.162[c]		
Agreeableness	-.054			-.211[a]			.145[c]		
Conscientiousness	-.029			.139[c]			-.177[a]		

[a] $p < .001$

[b] $p < .01$

[c] $p < .05$

humor-related items. The facets accounted for 32.83 percent ($p < .000$) of the variance (vs. 21.30 percent for the traits) and the humor-related items provided a significant ($p < .000$) increment in prediction (14.92 percent). When we conducted the analysis for males only (figure 4), the facets (52.20 percent; $p < .000$) could be seen to account for substantially more variance than the traits (30.40 percent; $p < .000$) and the humor-related items added an additional 7.21 percent ($p < .000$), which was more than half below that of the sample. For females (figure 4), the facets contributed much predictive power (52.70 percent; $p < .000$) close to that of the males, and humor-related items (20.50 percent; $p < .000$) accounted for substantially more of the variance than was found for males. These findings led us to conclude that facets better indicate personality than traits and that analyses computed separately for males and females provide considerably more explanatory power than those that do not incorporate gender.

Criterion Profile Analyses

It should now be clear from the results reported that analyses conducted on the sample as a whole are less powerful and can be more inaccurate than those calculated independently for men and women. Therefore, we conducted all subsequent analyses for male and female participants separately. Criterion profile analyses (CPA) for males found that the profile of significant facet and humor-related predictors contributed an additional 36.16 percent to the total variance (59.30 percent) above and beyond that allocated to the level component (23.14

Figure 4. Summary of hierarchical regression analyses with personality facets predicting playfulness for the sample, males, and females

	SAMPLE (N = 635)			MALES (N = 324)			FEMALES (N = 311)		
Step	β	ΔR^2	F_{cha}	β	ΔR^2	F_{cha}	β	ΔR^2	F_{cha}
1 Demographics		.0001	.0091		.0004	.0160		.0083	.2011
Minority status	.000			.001			.000		
Year in school	-.001			-.002			-.000		
2 Facets		.3283	9.8340[a]		.5220	14.4380[a]		.5270	10.4140[a]
N1. Anxiety	.018			.010			-.038		
N2. Hostility	-.042			.009			-.018		
N3. Depression	.009			.052			.145[c]		
N4. Self-conscious	-.032			-.049			-.232[a]		
N5. Impulsive	.129[a]			.212[a]			.123		
N6. Vulnerable	-.040			-.039			-.335[a]		
E1. Warmth	.106[c]			.001			.037		
E2. Gregarious	.102[c]			.248[a]			.081		
E3. Assertive	-.233[a]			-.277[a]			-.298[a]		
E4. Activity	.191[a]			.584[a]			.028		
E5. Excitement-seeking	.049[a]			.070			-.089[c]		
E6. Positive Emotion	.209			.134[c]			.293[a]		
O1. Fantasy	-.039			.066			-.183[a]		
O2. Aesthetics	-.043			-.036			.047		
O3. Feelings	.038			.031			.104		
O4. Actions	.051			-.332[a]			.336[a]		
O5. Ideas	.019			-.039			.137[c]		
O6. Values	-.059			.132[c]			-.145[b]		
A1. Trust	.002			.012			.132[c]		
A2. Straightforward	.046			-.068			.034		
A3. Altruism	-.089[c]			-.073			.289[a]		
A4. Compliance	-.009			-.093			.258[a]		
A5. Modesty	-.060			-.072			.045		
A6. Tender-minded	.022			-.190[a]			.152[b]		
C1. Competence	-.161[a]			-.491[a]			-.002		
C2. Order	-.153[a]			-.038			-.181[b]		
C3. Dutiful	.049			.172[b]			-.128[c]		
C4. Achievement	.015			.090			-.056		
C5. Self-discipline	.114[c]			.015			.187[b]		
C6. Deliberation	.035			.229[a]			.072		
3 Humor-related items		.1492	34.1230[a]		.0720	19.4220[a]		.2050[a]	41.9650
Funny	.146[a]			.349[a]			.280[a]		
Humorous	.081			.242[a]			.273[a]		
Sense of Humor	.109[c]			.137			.161[c]		
Jokes	-.038			.178[b]			-.113		

[a] $p < .001$

[b] $p < .01$

[c] $p < .05$

percent), representing a highly significant increment (F (34, 288) = 255.87; p < .000). This finding indicates that the prediction of adult playfulness for the male participants was best attributed to the combined pattern among them and not to singular results in which predictors were higher or lower than their individual mean level.

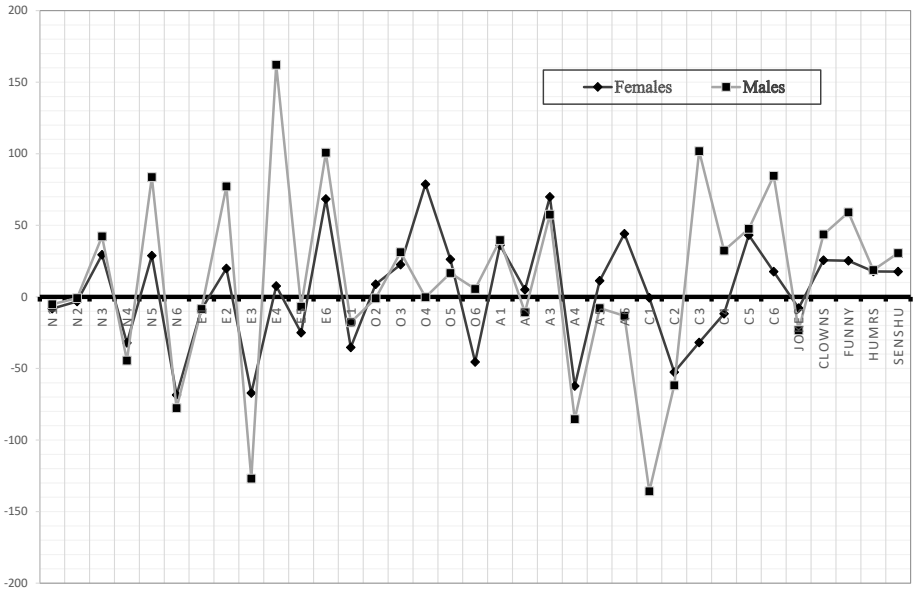
Further inspection of the CPA results revealed the significant members of the profile pattern predicting playfulness for men (figure 4). Using the Bonferroni correction (.05/35 = .0014), we found the following facets and humor-related items statistically significant at the attenuated alpha level: + impulsive (N5), + gregarious (E2), - assertiveness (E3), + activity (E4), - actions (O4), - tender-mindedness (A6), - competence (C1), - deliberation (C6), + joking, + humorous, and + funny. The significance of the profile component over the level component indicated these aspects of personality collectively predicted that a male university student could be characterized as playful.

For female participants in the study, we also found the profile component to be statistically significant while the level component was not, indicating that—like the males—the significant predictors of playfulness needed to be considered collectively rather than independently. We found the pattern component to add uniquely 52.02 percent (F (34, 275) = 535.1852, p < .000) to the model, significantly more than contributed by the level component alone (8.79 percent).

Identification of the facets and humor-related items that we found significantly to predict playfulness for females (figure 4) revealed both similarities and differences from the results for males. For females, significant predictors (again using the Bonferroni correction) were: - self-conscious (N4), - vulnerability (N6), - assertiveness (E3), + positive emotion (E6), - fantasy (O1), + actions (O4), - values (O6), + altruism (A3), + compliance (A4), + humorous, and + funny. The highly significant profile component signified that these predictors should be viewed communally to designate a playful female.

A comparison of the profile analysis for the male and female participants (figure 5) illustrates both the similarities and differences in the determinants of playfulness. As we can see, facets from all of the five NEO traits predicted playfulness for females, but for males, the neuroticism trait was not represented. Men and women shared the playful characteristics of being low in assertiveness and considered funny, but playful women sought out new experiences while playful men preferred the familiar. Beyond these qualities, the delimiting identities of playful men and women diverged considerably.

Figure 5. Profile Analysis by Sex for Playfulness Regression Weights



Discussion

This study makes several contributions to the playfulness literature, helping both to clarify mixed findings and to expand our knowledge, insights, and understanding. First, the results demonstrate that a facet-level approach to research about personality and playfulness is superior to examining these relationships at the trait level. The explanatory power of the five personality traits to predict playfulness was 21 percent, compared to the same analysis substituting the thirty facets for the traits, which increased predictive power substantially (to 33 percent). In addition, although the trait-level analysis revealed that only extraversion was significant, the facet-level analysis showed that some extraversion facets did not predict playfulness and also that facets within other traits did. Therefore, analyses conducted at the facet-level are much better at explaining playfulness, both in providing a more nuanced view of the interrelationships between personality and playfulness and in explaining more of the playfulness enigma, which allowed us to confirm our first hypothesis.

A second major impetus for the study was to attempt to explain conflicting

findings regarding gender differences in adult playfulness. Previous research has offered a range of results, in which some investigations find positive relationships (Barnett 2011; Glynn and Webster 1992), some find negative relationships (Glynn and Webster 1992), and some find fractional relationships (Barnett 2007; Boznielos and Boznielos 1999; Mixter 2009; Proyer 2014b; Proyer and Ruch 2011). In this study, we conducted identical analyses on the sample as a whole and separately for males and females at both the trait and facet levels, finding that more variance could be accounted for when we considered gender. In addition, at both the trait and facet levels of analysis, substantially different findings emerged in playfulness predictors for men and women. These results collectively provide strong confirmation of the last hypothesis (H_{14}), which addressed the modifying effect of gender in playfulness-personality associations. Because of this salient gender effect, we find it necessary to discuss and represent playfulness in separate conversations, one for men and one for women.

What Does a Playful Male Look Like?

For the male students in the study, personality facets proved a more potent predictor of playfulness than the humor-related measures, although both contributed significantly to the model. In combination, the personality facets and humor-related measures explained 59.41 percent of male playfulness, a larger amount than typically found in most personality studies. More specifically, we found playful males to be those who were impulsive (+ impulsivity) and liked a fast-paced (+ activity), recurring (- actions) lifestyle in which others are present (+ gregarious), although they are not particularly sympathetic (- tender-mindedness) and they are not likely to assert themselves (- assertiveness) in social situations. Although these playful males do not believe in their own capabilities (- competence), they want to meet their obligations and responsibilities (+ dutifulness) but tend to act more impetuously (- deliberation). In addition, they are commonly portrayed as frequently funny, humorous, and joking. The profile analysis demonstrated decisively that these personality characteristics together epitomized the playful male.

The single consistent finding in the literature holds that, at a trait level, extraversion is highly predictive of adult playfulness (Barnett 2011; Mixter 2009; Proyer 2012c; Proyer and Jehle 2013). We found partial support in our study for extraversion characterizing playfulness, but only three of the six extraver-

sion facets emerged and the other three did not. In one case (assertiveness), we observed a negative relationship. This outcome can be construed to further illustrate the need to conduct personality playfulness research at the facet level, because a trait approach clearly masked some relationships while others could have been erroneously inferred. When personality facets have been empirically considered, there is evidence of only one study in which a significant positive correlation was found (Costa and McCrae 1988), although playfulness was measured in an ancillary and less precise way. However, even with different scales and populations, our results are consistent, such that we can tentatively conclude a gregarious disposition is indeed an element of playfulness in young male adults as predicted (H_2). The gregarious quality focuses on the desire to be with others and our findings suggest that this is a strong preference for playful males. The contention that playful people are also more social has resulted in a pronounced "other-directedness" dimension in some conceptualizations (Proyer 2017; Proyer and Jehle 2013), although elsewhere it has been given only minor status (Barnett 2007; Glynn and Webster 1992; Shen et al. 2014). Thus, the stipulation that a social component be present in adult playfulness conceptualizations is at present equivocal and beseeches researchers to prioritize this issue and assess its salience in forthcoming empirical work.

A thesis that pervades virtually all of the efforts to conceptualize, define, and delineate adult playfulness is the presence of a happy, jovial, gleeful disposition (H_3). The data in the present study did not support this conjecture, because we did not find positive emotion—the facet that would best encompass this quality—a significant predictor of male playfulness. In addition, much of the literature posits that playful adults tend to act impulsively (H_5) (Power 2011; Proyer 2012a, 2012c, 2014; Shen et al. 2014) and that they are also less likely to be deliberate (H_7), disciplined (H_8), or self-conscious (H_6) about their actions. Some have also held the conviction that playful adults favor a fast-paced tempo (H_4) in their lives (Panskepp 2008; Power 2011). Our data did support the contention that playful young men tend to be impulsive and that they are inclined to act without deliberation and enjoy a more hectic pace of life. However, we did not find them to be more or less self-disciplined or self-conscious, as we predicted initially or as others have proffered (cf. Glynn and Webster 1992). This might offer an impetus for the idea that a more physical proclivity to playfulness exists among young adult men and that this may distinquish it from the more social playfulness of young females, which might also be more cognitive.

A number of theorists have also contended that the evolutionary value of

playfulness lies in the player's expanding awareness of the potential to entertain possibilities, to think in unconventional ways to solve problems that might later arise (cf. Bateson and Martin 2013; Brown 2009; Pellis, Pellis, and Himmler 2014; Sutton-Smith 1977). They propose that play and playfulness have persisted through the ages because they train individuals to adapt to a continually changing world. Based on this argument, we hypothesized that highly playful people would be skilled at entertaining new and unconventional ideas (H_9), exploring novel places and objects (H_{11}), and possessing imaginative (H_{10}) thought processes. We found none of these contemplated relationships for the males in the study. And in fact, we detected evidence to the contrary, in that a preference for the familiar was a significant playfulness predictor. It thus appeared that for playful males, these aspects of creativity and imagination were not integral to or predictive of their playfulness. However, we caution that any deductions inferred from these findings should be considered tentative and in need of more meticulous investigation given the correlative nature of our study.

What Does a Playful Female Look Like?

In females, compared to males, the personality facets and humor-related items collectively explained more of adult playfulness (73.20 percent). Considered individually, the facets that were high in predictive power were quite dissimilar. Personality as such was just as explanatory for the women as for the men (52.70 percent and 52.20 percent, respectively), however, the humor-related items captured more of the variance for female playfulness (20.50 percent) compared to male playfulness (7.21 percent). It was interesting to note that seeing oneself as funny and humorous were significant predictors of playfulness for both sexes and that this combination helped create much more accurate forecasts of playfulness in women.

Playful women are low in assertiveness, indicating they do not tend to be dominant or exhort their own agenda on others in social situations. Playful women are characteristically positive and typically are able to find and express pleasure in situations and social interactions. They feel comfortable in social situations, and they have concern for the wishes and feelings of others. Although women enjoy others and are amenable with them, they are self-reliant and feel capable of handling difficult or stressful occasions. Women who are playful are more open to new settings and experiences and are less likely to indulge in

flights of imagination or fantasy. Finally, as we discussed, they view themselves as funny and humorous although not because they tell jokes, which males are more inclined to do.

We found support for only three of the ten hypothesized personality predictors of playfulness for the women in the study, and a number of relatively new and thought-provoking findings emerged. The highly significant profile effect emphasized that all of these personality facets, in combination with the qualities of being funny and humorous, compositely predicted playfulness in women (H_{13}). Playful females were found to be more cheerful and positive in their general demeanor (H_3), but unlike males they were not found to be more gregarious (H_2) or to inject a hurried pace into their lives (H_4). They are able to focus their attention on a task at hand (H_8) and possessed no heightened tendency to think or act impulsively (H_5), as males were found to possess. In their social interactions, women who were high in playfulness were sympathetic toward others but at the same time unlikely able to defer to the wishes of others. And they were not concerned about what others thought of them (H_6). The apparent disparity depicting playful women as more immersed and deliberative in their actions than playful men may suggest that women tend to engage in more cognitive forms of playfulness, while physical appearances are more typical for men. However, other empirical research studies have not supported the suggestion that there are different typologies of playfulness.

In contrast to playful males, playful women more often sought novelty in the places they visited and things they did (H_{11}); however, they were less imaginative in their thinking (H_{10}) and just as open to new or unconventional ideas (H_9) as women who were less playful. These latter findings, taken together, tend to raise questions about the literature that posits playful individuals to be more creative (Bateson and Martin 2013) and divergent thinking to be enhanced by playful thoughts and interactions (Root-Bernstein and Root-Bernstein 2001, 2006; Sutton-Smith 1977). Although we do not wish to posit that these findings suggest playful people would be more creative as a result of their playful activities than less playful people, our findings suggest such an interpretation might result from further rigorous empirical study.

It was interesting to find that women who were very playful were also able to cope effectively with stressors in their environment. This might be interpreted as confirming the conjecture that a benefit of playfulness is that it can help manage stress and tension and lead to more resilience over the long term. The literature positing relationships between playfulness and mental health or

well-being or resilience is in its infancy, although the few studies that have been conducted (Magnuson and Barnett 2013; Proyer 2012c, 2014b; Qian and Yarnal 2011; Staempfli 2007; Yarnal and Qian 2011) provide fodder for the idea.

What Have We Learned about Adult Playfulness?

Playful Men and Playful Women

A number of important findings emerged from this study, and perhaps the most salient is that playfulness is very different in young adult men and women. The results of this study are in sharp contrast to the majority of adult playfulness research, which has either found only negligible differences between men and women in this age group (and beyond) (Barnett 2007; Bozionelos and Bozionelos 1999; Mixter 2009; Proyer 2014a, 2014b) or has presumed equivalence and not tested for such differences (Proyer 2012a, 2012c; Schaefer and Greenberg 1997; Shen et al. 2014). The finding of significant gender differences should not be a staggering outcome, as gender awareness emerges quite early in life (Quinn et al. 2002; Younger and Fearing 1999); for example, preschool-aged children decisively and consistently demonstrate their awareness of traditional gender stereotypes for toys, clothing, and occupational roles (Leinbach, Hort, and Fagot 1997; Levy and Haaf 1994; Shutts, Banaji, and Spelke 2010; Signorella, Bigler, and Liben 1993; Weinraub et al. 1984). And, throughout childhood and adolescence, there are very distinct trajectories reliably observed between boys and girls in their play preferences, styles, and modes of interaction (cf. Golombock et al. 2008; Martin and Ruble 2009; Ruble et al. 2006). Recent longitudinal research tracking playful (and less playful) children from kindergarten through third grades (Barnett 2018, 2019) has documented how each gender is differentially reinforced for exhibitions of playfulness by teachers and peers. This study demonstrated that early playfulness is regarded positively in young girls but negatively in young boys (e.g. often labeled as "class clown") and that a variety of social, academic, and psycho-emotional outcomes are conjoined. Thus, from an early age, children are socialized by adults to regard playful characteristics shown by girls as attractive, while those shown by boys are considered distasteful—and there are outcomes and consequences that accrue.

We found the personality facets uniquely account for more than 50 percent of the variance for both male and female participants, although the facets that comprised each depiction were demonstrably different for the sexes. Although

previous research has investigated relationships between adult playfulness and personality, the majority of these studies have been conducted at the trait level (Barnett 2011–2012; Mixter 2009; Proyer 2012c, 2017; Proyer and Jehle 2013). It has been decisively demonstrated here that a facet-level analysis provides more explanation and illumination of personality contributors to playfulness and that a comparison of the significant traits with significant facets reveals that relationships are often masked or erroneously decided. For example, the consistent finding that extraversion is the trait most strongly related to playfulness (Barnett 2011; Mixter 2009; Proyer 2012c, 2017; Proyer and Jehle 2013) is too broad to reveal what specific aspects of the trait do and do not predict playfulness. The significance of the extraversion facets of assertiveness, gregariousness, and activity but not of warmth or excitement seeking is much more informative about who playful people are (and are not) in comparison to findings proclaiming a significant extraversion result. Correspondingly, the lack of significance of a trait should also not lead to the supposition that none of its facets relates to playfulness, as demonstrated here for the agreeableness, conscientiousness, and neuroticism traits that have been concluded to be unrelated (Bateson and Nettle 2014; Proyer 2012b; Proyer and Jehle 2013) but whose individual facets are (e.g., impulsivity and self-consciousness in neuroticism; altruism and tender mindedness in agreeableness; competence and order, dutifulness and self-discipline, and deliberation in conscientiousness). The findings of this study further revealed which specific facets of personality portend playfulness for each gender and simultaneously reflect on the dimensions of playfulness claimed by the literature.

The plethora of studies investigating gender differences in personality are fairly consistent in detecting only minor disparities and arriving at the conclusion that the five-factor model (and the NEO-PI-R that measures it) is gender neutral (Borkenau et al. 2012; Else-Quest et al. 2006; Feingold 1994; Hyde 2005; Schmitt et al. 2008). Thus, we can reasonably argue that the considerable differences found in the determinants of playfulness for men and women must be due to the ways in which playfulness materializes or is socialized and not to inherent personality differences or attributions to the personality assessment. Therefore, our results strongly suggest that playfulness should be identified, defined, delineated, and portrayed in qualitatively distinct ways for young men and women. In addition, the results of the study show unequivocally that the predictors of playfulness must be viewed cooperatively, that they are interactive, and that they present a definitive but distinct "profile" of typical male and female playfulness. It is important to note, however, that although the find-

ings on gender differences in playfulness profiles may vary, the source of their divergence cannot be discerned. Playfulness may well be a gendered construct, which early preliminary findings with children suggest. However, there remains an open question—one in need of extensive study—as to what the true gender differences in adult playfulness are and the extent to which more traditional social stereotypes of male and female play are being perpetuated. The blurring of long-held distinctions and consideration for the permutations of gender have become aspects of a prevailing social movement that must be assimilated into research exploring male and female distinctions in playfulness.

The absence of consistent cross-gender evidence for any one of the hypothesized components of playfulness in this study insinuates that a number of possible alterations to our thinking about what playfulness may be in order. One potentially fruitful path may be to consider these findings are as they appear—as providing clear, albeit tentative (awaiting replication) indication that there are two fairly disentangled definitions of playfulness, one for men and one for women. There is reliable evidence that we can find different attributes comprising playfulness in preschool-aged children. In studies of playfulness with very young children, playful boys, in contrast to playful girls, were found to be higher in two of the playfulness dimensions (physical spontaneity, manifest joy), lower in one (cognitive spontaneity), and equal in two others (social spontaneity, sense of humor). The magnitude of the differences detected between playful young boys and girls led Barnett (1991b) to conclude, "The data strongly suggest that gender be taken into account in any study of playfulness with this age group" (386). Hence, it may not be unreasonable to posit that these early gender differences proceed along their own trajectory, being differentially reinforced, penalized, or stifled by various adults (e.g. parents, relatives, teachers, coaches, religious leaders) throughout their development into the early adult years. Indeed, recent research (Barnett 2018) has chronicled the disparity in responses to playful boys and playful girls by their teachers and peers throughout the early school years. In addition, the apparently discrepant findings indicating differences in cognitive and physical elements in playful expression warrants further study. I therefore suggest that future research on adult playfulness might regard adult male playfulness and adult female playfulness as qualitatively distinct constructs in need of separate paradigms, definitions, images, delineations, and explanations.

Playfulness and Humor-Related Characteristics

In addition to the personality profiles of playful men and women, we included

measures in the study to capture features that have been consistently prophesied to comprise playfulness and that do not appear to be well represented by the personality facets. These items assessed an individual's propensity to show humor through joking and to be regarded as funny, humorous, and having an enhanced sense of humor. We found these humor-related items to add significantly to efforts to predict playfulness for both men and women, although their collective contribution was more substantial for the female students. We found it interesting that, although personality facets forecast playfulness very differently for men and women, these humor-related items remained quite consistent. This observation appears to contradict the extant literature in which gender differences, when investigated, were found in only one of five playfulness dimensions—humorousness (Proyer and Jehle 2013).

For both the men and women in our study, being perceived as possessing the attributes of being both humorous and funny were strong predictors of playfulness, finding gender differences only in telling jokes as a behavioral aspect for males but not females. Of further note, we found for both men and women, playfulness was not significantly ($p < .01$) predicted by a "sense of humor." At first glance, this finding seems perplexing, and the extant literature has done little to provide distinctions about how these terms have been variously used by researchers or perceived by study participants. In studies of adult playfulness, humor has emerged as a prominent identifying component (Proyer 2014a; Proyer and Jehle 2013), although items have mingled all these constructs together, as in "having a sense of humor," "being perceived as humorous by others," and "liking to joke and display other humorous behaviors" (being seen by others as "funny") as a single assessment. Proyer (2014a) attempted to provide some distinctions when he investigated aspects of humor by seeking relationships between six humor subscales (such as "enjoys verbal humor," "enjoys laughing at oneself," "finds humor under stress") and five playfulness factors. In this study with adults of all ages (eighteen to ninety-seven), he found that some types of humor related to some but not all of the playfulness dimensions and some humor subscales did not relate to any playfulness dimensions, thus suggesting that specific aspects of humor link to specific aspects of playfulness, although the distinctions remained elusive. Additional efforts to dissect the humor construct were undertaken by exploring the relationship between different humor dispositions and playfulness. Ruch and Proyer (2008, 2009, 2010, 2014) identified three different characteristic tendencies comprising humor, consisting of the fear of being laughed at, the joy of being laughed at, and the joy of laughing at others. Proyer (2012c) found that

these humor-related dispositions significantly predicted playfulness in adults of all ages (although to a small extent) and that playfulness was related to having little fear of being laughed at by others. And he also found it related to experiencing enjoyment when laughing at others (but not enjoyment at being laughed at by others). The findings of this study suggest that our college students perceived both similarities and distinctions between being seen as "humorous," "funny," "joking," and having a "sense of humor" because, although these items significantly correlated, not all predicted playfulness. Without extensive follow-up, we are left to ponder the more precise essence of the relationship between adult playfulness and the various constructs related to, but not identical with, humor. Is humorousness an element of the definition of playfulness, an orthogonal factor of it, a characteristic of those who view themselves or are seen by others as playful, or something else? There are empirical studies that provide support for each of these perspectives, so that further research (perhaps qualitative) is needed to explain how and why they are differentially related to adult playfulness.

Conclusions

This study has contributed to the literature on adult playfulness in several ways, in each case resolving some contentious issues and simultaneously raising others. First, we have demonstrated that much of the essence of adult playfulness lies within the personality of the player and that the coincident aggregate of personality facets offers the explanation for playfulness. This discovery is in sharp contrast to the preponderance of research on adult playfulness, which has focused on the discrete factors presumed to comprise (and define) playfulness, and beckons researchers to adopt a more expansive and encompassing approach. It may well be that efforts to capture the playfulness quality in adults have proven heretofore elusive because it requires a synergistic rather than a schematic system. This may therefore intimate a different and more productive path. Another approach to thinking about adult playfulness might be to move away from studying the parts (dimensions and factors) and instead focus on the whole (the construct of playfulness). Our finding that the composite of the significant personality and humor-related elements paints the profile of a playful individual for both men and women underscores the need to consider relationships and not elements. With this approach, we might find an explanation for the lack of support in the research for previously suggested dimensions,

because they were each determined and considered virtually independent of each other. The advent of a playfulness profile presents a notable contribution to the playfulness literature and directs attention to how previously identified qualities intersect, thereby providing a different and qualitatively distinct outcome. The sequel, therefore, to the story of adult playfulness to date might be that it is more compelling and parsimonious to view adult playfulness as an intersection of individual characteristics that result in playful inclinations. Future researchers will need to determine these characteristics (though, hopefully, we have identified them as a first step), how they interact, and where and how the junctures are determined or may be designed.

A second major outcome of our study was the potent and pervasive finding that playfulness in male young adults looks demonstrably different than it does in female young adults. The contributions of personality to explanations and predictions of playfulness and the profiles and constituent components diverged considerably for men and women. Extant research on adult playfulness has largely ignored or statistically dispensed with gender differences; and when dissimilarities have been noted, they have been found to appear only sporadically. The study described in this article offers a descriptive portrait of the playful male and the playful female and depicts each as qualitatively distinct with a compendium of interrelated personality features and humor-related appendages. I hope that these outcomes might stimulate future research to adopt a longitudinal approach that explores the antecedents and social engineering of playfulness across developmental periods.

Caveats and Suggestions

A major impetus for this study was to garner empirical evidence to validate the dimensions of playfulness that had been prophesied by playfulness theorists and researchers. A review of the literature prescribed consistent domains or factors that should be evinced, culminating in the research hypotheses that we generated and tested. However, there was one concept that has appeared throughout the literature not incorporated into this study—that related to the element of fun. Shen and her colleagues (2014) positioned a fun-seeking motivation as the major impetus that drives playful people, consisting of fun-seeking initiative (actively creating fun activities) and reactivity (being responsive to fun stimuli). A meticulous examination of the fun-seeking and fun-loving element was absent

in this study because none of the personality facets captured this quality. The presence of this characteristic and how it might fit within the profile of male or female playfulness (or both) remains inexplicable at this juncture, warranting further research.

While showing a clear contribution to adult playfulness for both men and women, the enigmatic findings about the specific differential meanings ascribed to the humor-related measures (funny, humorous, jokes, sense of humor) warrant further scrutiny and analysis. Each of these attributes was measured by an individual item and was not empirically validated, which may present an issue worthy of further discussion and study. Correlations and regression weights between items differed, so that it is not at all clear what interpretations were evoked using these simple labels. In some ways, this could be viewed as advantageous because the researcher did not attach an interpretation incongruent with that of the participants. However, the single-word terms did not provide any insight into participants' different perceptions of each. The university students appeared to have well-defined representations of each of these concepts, but the nature of their assessment precluded any insight or understanding of them.

It was also not clear how respondents interpreted the instruction to indicate "How ____ are you?" that comprised the playfulness and humor-related assessments. Particularly with sample members in the developmental stage of emerging adulthood, where peers play a substantial and influential role and in which individuals are occupied with the preeminent issue of forging their identity (Arnett 2000), it is not clear what frame of reference they adopted in responding to these questions. Were sample members using the ten-point response scale for these items in an absolute numerical sense (as the labels "a lot" to "not at all" ordained), or were they instead considering their response vis-à-vis their peers in a relative sense? If it is the latter, research has clearly shown that we associate with those who are most like us—the so-called "similarity hypothesis" (Berscheid and Walster 1969; see also Izard 1963; Miller et al. 1966). Therefore, it might be that highly playful people associate largely with other playful people and, similarly, that those low in playfulness have friends, the majority of whom are also unplayful. This might result in a varying reference point from which to respond to the items and complicate any lucidity evolving from these data. It also might account for the ambiguity of interpreting the relationships with the humor-related items that resulted. It is thus imperative that future efforts to garner self-report data should explicate the reference point clearly to the respondent and that future research should vary the context to provide insights

into how perceptions and responses may fluctuate.

The major finding of this study was the substantial differences in playfulness between male and female participants. We reached this conclusion by the qualitatively distinct results showing different playfulness profiles. However, the men and women in the study were partitioned into separate groups based on their biological sex and not on distinctions in lifestyle or determination of how and where they affiliate and identify. Research is only beginning to explore the implications of the widening array of sexual identities and is now advocating for abandoning the more traditional ways of dichotomizing gender and the use of "masculine" and "feminine" (cf. O'Neil and Egan 1992; O'Neil and Carroll 1988). Therefore, the reader should be strongly cautioned that the distinctions between men and women in this study should be interpreted as representing only the narrowest of perspectives, based only on a biological distinction.

Just as it is imperative that future research expand the definition of gender to more comprehensively capture contemporary societal customs, so too is it crucial that other personal variables and their relationship to playfulness be explored. If there is any validity to the argument that early experiences throughout childhood and adolescence shape the quality and quantity of playfulness in adulthood, then it should also follow that we can gain valuable insights into its origins and plasticity by investigating relationships with family configurations, parenting styles, play interactions and their consequences with age mates and adults, and racial and ethnic beliefs and practices. A wealth of literature has shown these all to be major influences in shaping and socializing the young, which culminate in demonstrable effects on young adult behaviors, thought processes, and psychological and emotional functioning. We cannot expect playfulness to be exempt from these powerful forces, and in our efforts to understand more fully and explain adult playfulness, they should not be neglected.

As with any research, particularly when sample members are university students, the issue of the external validity of the findings is contentious. Although this population was chosen because its members have been the participants in much of the extant research on adult playfulness and the hypotheses derived from this literature must be consistent, it still forms an important limitation of the study. In addition, comparisons to students found in previous studies must also ponder differences between generations (cf. Twenge, Campbell, and Freeman 2012), given the perceptible and rapid advances in technology, for example, and that replication may not be expected or desirable (Greenfield 2017). Whether the results are applicable to young adults who are not engaged

in university studies, or to different age groups or life circumstances, we do not know. Readers should thus adopt a cautious approach in attempting to apply these findings other than to individuals of the same demographic as the participants in the study, until replication and extension of the findings can be successfully produced.

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