**A new Structural Model for the Study of Adult Playfulness:
Assessment and Exploration of an Understudied Individual Differences Variable**

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Abstract

Adult playfulness is an understudied personality trait. A new 28-item questionnaire (the OLIW) is proposed that assesses four basic components; namely, Other-directed, Lighthearted, Intellectual, and Whimsical playfulness. Study 1 provides support for the factorial validity in an Exploratory (N=628) and a Confirmatory Factor Analysis (N=1,168). Item- and scale-statistics were satisfactory. Correlations in the expected range with other playfulness questionnaires provide support for the convergent validity of the scale; there was between 3 and 30% shared variance with the big five personality traits. Test-retest reliabilities were between .67 and .87 for a one-week, two-weeks, one-month, and three-months intervals (N=200; using a reduced set of 12 items). Study 2 found convergence between self- and peer-reports in the expected range (i.e., .44-.57). Participants in Study 3 (N=295) collected daily behavior ratings for 14 days for Play, Aggression, Exhibitionism, and Impulsivity, and completed respective trait measures on day one. The OLIW demonstrated correlations between .29 and .36 for the aggregated behavior ratings, which was in the expected range. Overall, the findings for the psychometrics, reliability (internal consistency, test-retest), and validity (factorial, convergent, discriminant) are satisfactory and further use of the OLIW is encouraged.

Keywords: adult playfulness; aggression; diary study; exhibitionism; humor; impulsiveness; play; peer-rating

Setting exceptions aside, the study of adult playfulness has not been in the main focus of attention in psychology over the past decades. While most of the research has been conducted with children, there is literature supporting the notion that playfulness may be of relevance for adults, too. For example, Lieberman (1977) posits that “[...] playfulness as a quality of play would developmentally transform itself into a personality trait of the player in adolescence and adulthood” (p. 23). Proyer (2014b) found that adults can list a broad range of uses of playfulness in their daily lives (at work and in private life). Much earlier, Murray (1938) has acknowledged the *Need for Play* as a basic human need (“Play (Playful attitude). To relax, amuse oneself, seek diversion and entertainment. To ‘have *Fun*,’ to play games. To laugh, joke and be merry. To avoid serious tension”; p. 83). Cattell (1950) lists playfulness in two nuclear clusters in his description of principal personality trait clusters (i.e., “austerity, thoughtfulness, stability” vs. “playfulness, changeability, foolishness;” L1: “amorousness, playfulness” vs. “propriety”). Goldberg and Rosolack (1994) identify a playfulness cluster (associated with *Extraversion*) and Goldberg (1990) lists playfulness as one example for *Spontaneity* as a category (*Extraversion*) in the Norman (1967, cited after Goldberg, 1990) taxonomy of trait descriptive adjectives (along with *impulsive*, *carefree*, and *zany*). Smith and Apter’s (1975) *Reversal Theory* encompasses *telic* vs. *paratelic* states; the latter are characterized by playfulness. Peterson and Seligman (2004) see playfulness (used synonymously with humor) as strength of character assigned to the virtue of *Transcendence* (i.e., using humor/playfulness to forge connections to the larger universe and provide meaning).

A major contribution to the field is Barnett’s (2007) study using focus groups of young adults to identify four basic components of playfulness; namely, (1) *Gregarious* (cheerful, happy, friendly, outgoing, sociable); (2) *Uninhibited* (Spontaneous, impulsive, unpredictable, adventurous); (3) *Comedic* (clowns around, jokes/teases, funny, humorous); and (4) *Dynamic* (active, energetic). In later studies Barnett (2011; Magnuson & Barnett, 2013) and others (e.g., Proyer & Rodden, 2013; Qian & Yarnal, 2011) used the itemized adjectives as a questionnaire (*Playfulness Scale for Young*

Adults; PSYA). Potential biases must be noted when, for example, studying playfulness in its relationship with subjective well-being (when using ‘being *happy*’ as predictor and criterion in the same analysis), or regarding the overlap with measures for trait cheerfulness (Proyer & Rodden 2013). Nevertheless, the scale was successfully used in earlier studies (e.g., Barnett, 2011; Magnuson & Barnett, 2013; Proyer & Rodden, 2013; Qian & Yarnal, 2011).

Glynn and Webster (1992) argue that play is the *opposite* of work (a critical notion though; e.g., Barnett, 2007; Csikszentmihalyi, 1975; Proyer, 2014b) and note: “[...] we conceptualize playfulness as a characteristic of the player and position the trait within a constellation of personality, demographic, and organizationally defined characteristics“ (p. 84). They use pairs of adjectives from Osgood’s (1962) semantic differential for the development of the *Adult Playfulness Scale* (APS) that consists of five facets (i.e., *Spontaneous*, *Expressive*, *Fun*, *Creative*, and *Silly*). However, these data are difficult to interpret when studying individual differences variables and the article introducing the APS leaves questions open (e.g., number of items; communalities cannot be computed from the data given; item statistics are missing etc.). Despite its frequent use, the APS suffers from theoretical and methodological shortcomings.

Proyer (2012a, 2014a) examined the structure in linguistic corpus analyses of the German language revealing implicit linguistic and psychological theories on playfulness. The best fit was found for a five-factor solution; namely, (a) *Cheerful-engaged*; (b) *Whimsical*; (c) *Creative-loving*; (d) *Intellectual*; and (e) *Impulsive*. Proyer and Jehle (2013) subjected seventeen playfulness questionnaires to a joint factor analysis and found best fit for a five-factor solution; namely, (a) *Humorousness*; (b) *Cheerfulness–Uninhibitedness*; (c) *Expressiveness*; (d) *Other-directedness*; and (e) *Intellectuality–Creativity*. Subsequent analyses revealed that the *Cheerfulness–Uninhibitedness*-factor (*Extraversion*, *Emotional Stability*) and the *Expressiveness*-factor (*Extraversion*) demonstrated strong overlap with broader personality traits (explaining 73%/47% of the variance), indicating a bias of existing measures towards *Extraversion* and *Emotional Stability*. Factor I (*Humorousness*) points

at the missing differentiation between playfulness and humor in the literature (Proyer, in press; Proyer & Ruch, 2011). Items such as “*I have a good sense of humor*”/“*I laugh a lot*” are frequently used for the assessment of *playfulness* (about one fifth of the items in Proyer & Jehle, 2013) and make it difficult to test specific predictions for either humor or playfulness.

Based on a thorough literature review and combining different approaches in the study of adult playfulness (e.g., psychometric approaches, factor-analytically derived models, qualitative analyses, etc.), the author (Proyer, 2015) has proposed a new structural model of playfulness that consists of four facets; namely, (a) *Other-directed* (*O*; i.e., enjoying to play with others; using ones PF to make social relations more interesting or to loosen up tense situations with others; enjoying good-heartedly teasing); (b) *Lighthearted* (*L*; i.e., seeing life as a game and not worrying too much about future consequences of one’s own behavior; liking to improvise; reserving time in the daily routine for play); (c) *Intellectual* (*I*; i.e., liking to play with ideas and thoughts; liking to think about and solving problems; thinking about and trying different solutions for a problem; preferring complexity over simplicity); and (d) *Whimsical* (*W*; i.e., finding amusement in grotesque and strange situations; having the reputation of liking odd things or activities; finding it easy to find something amusing for oneself and/or others in everyday life situations and interactions).

The *Other-directed* and *Intellectual* components were directly derived from Proyer and Jehle’s (2013) factor-analytic study. It has been argued (e.g., Proyer, 2012a, 2014a, in press; Proyer & Jehle, 2013) that the “humorous component” of playfulness should rather be seen as the liking of unusual and odd objects and persons, or finding amusement in everyday kinds of situations.

Whimsical playfulness must not necessarily lead to, or elicit humor and/or laughter—it describes a *playful* way of dealing with everyday situations, or activities that playful people pursue.

A *Lighthearted* facet emerged in the lexical studies (Proyer, 2012a), covering contents such as being careless, not ruminating, and not being strict, or exact. It is apparent that this is similar to earlier conceptualizations of playfulness as spontaneous, uninhibited, or unpredictable facets (cf.

Proyer, 2015). Pursuing *Lighthearted* PF is associated with not worrying too much about the consequences of playful behaviors—even if they may be *risky*, in the sense of potentially not being fully appreciated by social interaction partners, or may lead to difficulties in given situations (e.g., when having to improvise to cover deficits in the preparation of materials, or risking a comment that could be misunderstood in nonplayful settings).

Based on these four components and earlier work (including, e.g., Barnett’s [2011] notion that “People who are playful are able to transform almost any situation into one that is amusing and entertaining by cognitively and imaginatively manipulating it in their mind;” p. 169), Proyer (2015) proposes a revised definition of playfulness as a personality trait in adults:

Playfulness is an individual differences variable that allows people to frame or reframe everyday situations in a way such that they experience them as entertaining, and/or intellectually stimulating, and/or personally interesting. Those on the high end of this dimension seek and establish situations in which they can interact playfully with others (e.g., playful teasing, shared play activities) and they are capable of using their playfulness even under difficult situations to resolve tension (e.g., in social interactions, or in work-type settings). Playfulness is also associated with a preference for complexity rather than simplicity and a preference for—and liking of—unusual activities, objects and topics, or individuals (Proyer, 2015; p. 93-94).

The main aim of this set of studies is narrowing some gaps in the literature by addressing understudied areas. In particular, structural issues, measurement issues, and the convergence between trait measures and actual play behavior will be tested.

Study 1

Study 1 describes the development of the OLIW, a questionnaire for the assessment of the four facets of playfulness. Factorial validity was established in two independently collected samples by means of Exploratory and Confirmatory Factor Analyses. Participants completed three other

measures for playfulness and a measure for the big five personality traits. Playfulness is associated with *Extraversion*, *Culture*, *Emotional Stability*, but low *Conscientiousness* (e.g., Proyer, 2012bc). The multiple squared correlation coefficient between a one-dimensional measure of playfulness and the big five personality traits was $R^2 = .46$ (Proyer 2012c). This shows a substantial overlap, but also that the five broad personality traits cannot fully account for playfulness (cf. Barnett, 2011). It was expected that the described relations could be replicated, but that there would be differences among the facets. For example, *Other-directed* PF requires interaction with other people. Hence, greater levels of *Extraversion* and *Agreeableness* may be expected, while the *Intellectual* facet was expected to have greater overlap with *Culture*.

Method

Participants

Sample 1 (Construction Sample): $N = 628$ adults ($n = 204$ men, $n = 422$ women; two participants did not indicate their gender) between 18 and 78 years ($M = 36.3$, $SD = 14.9$). Of these, 11.6% had a completed vocational training, 38.9% had a diploma qualifying them to attend a university, 42.2% held a university degree, and an additional 4.8% held a doctoral degree (others had lower educational status or did not provide information). Most were German (47.0%), Swiss (21.5%), or Austrian (28.2%). More than a third (39.6%) were single, 27.8% were in a long-term relationship, 24.4% were married, 1.4% were widowed, and 5.9% were divorced or lived separated from their partner (others did not provide the information).

Sample 2 (Replication Sample): $N = 1,168$ adults ($n = 341$ men, $n = 827$ women) aged between 18 and 79 ($M = 40.0$, $SD = 12.04$). Of these, 40.3% had never been married, 45.5% were married, 1.2% were widowed, and 12.9% were divorced. They were highly educated, 59.8% held a degree from university, 21.5% have completed compulsory education, 7.0% have completed an apprenticeship, and 0.7% had less than compulsory education (others provided no information).

Sample 3 (Test Retest Correlation Sample): $N = 200$ adults (35 men and 165 women) between 19 and 84 years ($M = 44.2$, $SD = 13.1$). About one fifth (22.0%) were single, 43.0% were married or in a registered partnership, 22.5% were in a relationship, but not married (others were divorced, lived separated, or were widowed). In total, 45.5% held a degree from a university and an additional 18.0% from a college of applied sciences, 19.5% had a diploma that would qualify them to attend a university, and others had completed vocational training, or completed basic schooling.

Instruments

The *OLIW* was developed in this set of studies. First, fifty-eight items were written based on the definitions of the four facets. The first author and a group of research assistants generated the items. The full set of items was administered to the participants of Sample 1 using a 7-point answer format (1 = “*strongly disagree*,” 7 = “*strongly agree*”) and the reduced set of the best suiting items to Sample 2.

The *Short Measure of Adult Playfulness* (SMAP; Proyer, 2012b) assesses an easy onset and high intensity of playful experiences along with the frequent display of playful activities with five items (e.g., “I am a playful person”) using a 7-point scale (1 = “*strongly disagree*,” 7 = “*strongly agree*”). There is support for the proposed unidimensionality and high internal consistencies ($\geq .80$; Proyer, 2012b; $\alpha = .88$, this sample). Convergent and discriminant validity are well supported.

The *Adult Playfulness Scale* (APS; Glynn & Webster, 1992) is a list of 32 pairs of adjectives; of these 25 were scored. Its subscales are *Spontaneous* (e.g., spontaneous vs. disciplined; 7-point scale; $\alpha = .76$, this study), *Expressive* (e.g., bouncy vs. staid; $\alpha = .72$), *Fun* (e.g., bright vs. dull; $\alpha = .72$), *Creative* (e.g., imaginative vs. unimaginative; $\alpha = .72$), and *Silly* (e.g., childlike vs. mature; $\alpha = .70$). Glynn and Webster report satisfactory reliabilities and data on convergent and predictive validity. As in earlier studies (Proyer, 2011, 2012bc; Proyer & Ruch, 2011), the German version of the instrument was used.

The *Playfulness Scale for Young Adults* (PSYA; Barnett, 2007) was developed based on adjectives identified in focus groups of young adults as being indicative characteristics of playful people. For this study, the adjectives were transformed into items (e.g., “active” into “I am an active person”; 1 = “*strongly disagree*,” 4 = “*strongly agree*”). The PSYA consists of four subscales; namely, *Gregarious* ($\alpha = .72$, this sample), *Uninhibited* ($\alpha = .71$), *Comedic* ($\alpha = .75$), and *Dynamic* ($\alpha = .71$). The PSYA has already been used widely in research (e.g., Barnett, 2011; Proyer & Rodden, 2013; Qian & Yarnal, 2011).

The *Inventory of Minimal Redundant Scales* (MRS-25; Ostendorf, 1990) is a bipolar list of 25 pairs of adjectives for the subjective assessment of the big five personality traits. It uses a 6-point scale (“very”–“quite”–“rather” for each pole), has good psychometric properties, and is frequently used in the German language area. Internal consistencies in this study were $\alpha = .86$ (*Agreeableness*), $\alpha = .76$ (*Conscientiousness*), $\alpha = .88$ (*Emotional Stability*), $\alpha = .83$ (*Extraversion*), and $\alpha = .78$ (*Culture*).

Procedure

Participants in *Sample 1* were recruited via leaflets and mailing-lists for an online study (using SurveyMonkey) on humor, playfulness, and personality (they had to be ≥ 18 years of age). They received individualized feedback on their test-results upon request. Participants were not paid for their services. All playfulness items that were initially developed were given first after completion of basic demographic information followed by the *SMAP*, *PSYA*, *APS*, and *MRS-25*.

Participants in *Sample 2* completed the 28-item OLIW derived in Sample 1 on a website that offers free online assessments related to positive psychology (www.charakterstaerken.org). Upon logging on to the website, the participants get an overview of available measures and complete instruments according to their liking on the website. The website is hosted by the University of

Zurich (UZH, Switzerland). Participants receive immediate feedback on their test results after completion of the questionnaire.

Data for *Sample 3* were collected using participants from a positive psychology intervention online program (www.staerkentraining.ch) that was run by the author at the UZH. The program was free of charge. The participants completed positive psychology activities and received an individualized feedback at the end of the program. They completed 12 items of the OLIW at baseline, after completion of the activity (post measure), after two weeks, one month, and after three months. The author selected the three items with the highest corrected item-total correlations for each of the four OLIW-dimensions; time constraints did not allow administering the full OLIW.

Studies 1 to 3 were carried out in accordance with the recommendations of the ethics committee of the psychology department at the University of Zurich. All participants completed the measures voluntarily, received information on the nature of the study, and received feedback on their test results.

Results

Factorial validity: Principal Component Analysis (PCA; Sample 1). The 58 items developed for the assessment of the four facets of playfulness were subjected to a Principal Component Analysis (PCA). Items were selected based on (a) high loadings on the intended factor ($\geq .40$); (b) low secondary loadings on other factors (a difference $\geq .20$ between the highest and second highest loading; loadings $< .30$ on the other factors); (c) enablement of high corrected item-total correlations; and (d) avoidance of overlap in the content. The twenty-eight items that fit these criteria best were subjected to a PCA. Seven factors exceeded unity (eigenvalues = 5.96, 2.28, 1.93, 1.57, 1.29, 1.17, and 1.11). The scree test and a parallel analysis (Horn, 1965) supported the extraction of four factors (random eigenvalues: 1.54, 1.46, 1.40, 1.35, 1.31, 1.26, and 1.22). Data were rotated to the Oblimin-criterion ($\delta = 0$; the full pattern matrix along with correlations with demographics and the full

questionnaire including instructions and the scoring key are given in the Online Supplementary Material).

Loadings on the factor labeled *Intellectual* playfulness ranged between .43–.63 (median = .51) and the absolute difference between the highest and second highest loadings ranged between .26–.63 (median = .31). The median of the loadings on the *Lighthearted* factor (median = .67; range between .55–.69) was numerically higher than the one for *Intellectual* playfulness. The absolute differences between the highest and second highest loadings indicated a clear pattern and were between .55–.69 (median = .46). The item-loadings assigned to *Other-directed* playfulness ranged between .39–.69 (median = .57); the absolute differences between the highest and second highest loading were between .28–.52 (median = .47). Finally, loadings on the *Whimsical* factor ranged between .42–.79 (median = .64) and the absolute difference between the highest and second highest loading ranged between .37–.71 (median = .52). The intercorrelation of the factor scores was between .14 (*Whimsical–Other-directed*) and .25 (*Intellectual–Whimsical*). Hence, the four factors showed the expected positive relationship, but were not redundant.

Factorial validity: Confirmatory factor analysis (CFA; Sample 2). For an independent verification of the proposed solution, a Confirmatory Factor Analysis using Mplus (Muthén & Muthén, 2007) allowing factors to correlate using a robust weighted least squares estimator (WLSMV) was computed. Model fit was tested in terms of the *comparative fit index* (CFI; coefficients larger than .90 indicate an acceptable fit; e.g., Hu & Bentler, 1998), the *root mean square error of approximation* (RMSEA; coefficients < .08 indicate an acceptable fit), and the *standardized root mean square residual* (SRMR; coefficients smaller than .10 indicate an acceptable fit). Additionally, the χ^2 -value was computed, but it was not further considered, given its dependency on the sample size. Fifty-eight participants had to be excluded for the analyses, because they had incomplete data sets.

The analysis revealed a CFI of .89, a RMSEA score of .066 (95% CI: .063-.069), and an SRMR of .056; $\chi^2 = 4782.44$ ($df = 195$, $p < .001$). Overall, the RMSEA and the SRMR indicated model fit, while the cut-off score for the CFI was not met by a small deviation. Taken together, the coefficients seem acceptable for continuing to work with the scale. While there is no theoretical rationale for a 2-, 3-, or > 4-factor model, the model fit for a one-factorial solution was tested (as a general factor of playfulness), but there was no model fit (except for the SRMR); CFI=.71, RMSEA=.107 (95% CI: .104-.110); and SRMR=.090. A comparison of the models (1- vs. 4-factors) using the DIFFTEST option in Mplus indicated that model invariance could not be assumed ($\chi^2 = 1011.08$, $df = 6$, $p < .001$).

Scale statistics (Samples 1 and 2). Table 1 shows that the reliabilities yielded a median of .75 across both samples. All scores were normally distributed and there were minor associations between younger age and *Other-directed* playfulness and greater *Intellectual* playfulness and higher age; other relations with demographics were negligible. The intercorrelations among the four scales were between .23/.31 (*Whimsical–Other-directed*) and .43/.45 (*Lighthearted–Intellectual/Whimsical–Intellectual*) in Samples 1/2 (all $p < .01$).

Insert Table 1 about here

Convergent and discriminant validity (Sample 1). Although, age and gender only had minor effects on the scores in the OLIW, partial correlations were computed controlling for potential effects when testing the overlap of the OLIW with three playfulness scales. The correlation analyses shown in Table 2 support the convergent validity of the OLIW; the numerically strongest overlap was found for the SMAP (especially, *Other-directed* playfulness). Similar correlation coefficients were found between the PSYA and the OLIW; with the exception of *Gregarious* playfulness in the PSYA and *Whimsical* playfulness in the OLIW (also comparatively low coefficients were found between

Dynamic and *Whimsical* playfulness). The numerically largest coefficient was found between *Comedic* PF (PSYA) and *Other-directed* playfulness in the OLIW. Finally, there were also positive associations between the APS and the facets of the OLIW. The numerically largest coefficient was found between *Spontaneous* (APS) and *Lighthearted* playfulness.

Insert Table 2 about here

The localization of the OLIW in the big five personality traits was tested next (see Table 3). There was 3-30% shared variance between the big five and playfulness; numerically strongest for *Culture* and *Whimsical* playfulness. In line with expectations, *Conscientiousness* was robustly negatively associated with *Lighthearted* playfulness. *Emotional Stability* was mainly associated with *Intellectual* and *Lighthearted* playfulness, while *Culture* was positively associated with all facets of the OLIW—numerically strongest with *Whimsical* playfulness.

Insert Table 3 about here

A set of regression analyses was computed for testing the overlap of the big five personality traits (predictors, Step 2, method=stepwise; Step 1 = age, gender, method=enter) separately with each of the four scales (i.e., criteria). There was a multiple squared correlation coefficient of .24 ($F[4, 466] = 38.33, p < .001$) for the prediction of *Other-directed* playfulness (5% accounted for by Step 1). In the final model, *Extraversion* ($\beta = .36; \Delta R^2 = .17$) was the best predictor followed by *Culture* ($\beta = .20; \Delta R^2 = .04$) and younger age ($\beta = -.20$, all $p < .001$). The R^2 -coefficient for *Lighthearted* playfulness was .37 ($F[6, 466] = 46.39, p < .001; \Delta R^2$ for Step 1 = .03); predictors were low *Conscientiousness* ($\beta = -.42; \Delta R^2 = .16$), followed by *Emotional Stability* ($\beta = .32; \Delta R^2 = .13$), and *Culture* ($\beta = .21; \Delta R^2 = .05$), *Extraversion* ($\beta = .09; \Delta R^2 = .007$), and higher age ($\beta = .13$; all $p < .001$). There was an $R^2 = .34$ ($F[5, 466] = 46.59, p < .001$) for the prediction of *Intellectual* playfulness;

about 12% were accounted for by demographics (Step 1; higher age, $\beta = .31$ in the final model); of the big five personality traits, *Culture* ($\beta = .36$; $\Delta R^2 = .15$) as well as *Emotional Stability* ($\beta = .25$, all $p < .001$; $\Delta R^2 = .06$) and lower *Conscientiousness* ($\beta = -.09$, $p = .018$; $\Delta R^2 = .008$) were predictive. Finally, there was an $R^2 = .30$ ($F[5, 466] = 29.98$, $p < .001$) for the prediction of *Whimsical* playfulness (of these .026 were accounted for by demographics in Step 1); predictors were *Culture* ($\beta = .51$; $\Delta R^2 = .24$), lower *Conscientiousness* ($\beta = -.16$; $\Delta R^2 = .03$), and lower *Agreeableness* ($\beta = -.13$, all $p < .01$; $\Delta R^2 = .02$).

Test-retest reliabilities (Sample 3). Participants in Sample 3 completed a reduced set of twelve items (three per scale) from the OLIW at four occasions for an initial test of the test-retest reliabilities (see Table 4). The alpha-coefficients were high for three out of the four scales (except *Other-directed* playfulness) and the test-retest correlations were $\geq .67$ across three months.

Insert Table 4 about here

Discussion

The main aim of Study 1 was to test a new subjective measure for *Other-directed*, *Lighthearted*, *Intellectual*, and *Whimsical* playfulness (OLIW, 28 items) as the basis for further studies on adult playfulness. Data from three samples support the factorial validity and demonstrate satisfactory internal consistencies and test retest-reliabilities (preliminary data). Effects of gender were negligible, but *Intellectual* PF increased with age, while *Other-directed* playfulness tended to decrease with age. However, these associations were low in size. Overall, age and gender do not strongly contribute to the expression of playfulness as measured with the OLIW (cf. Proyer, 2014c). Overall, the item- and scale-statistics were encouraging and the psychometric properties of the OLIW are satisfactory for future research purposes.

Convergent validity was supported by good convergence with three other playfulness questionnaires (Barnett, 2007; Glynn & Webster, 1992; Proyer, 2012b). The four OLIW facets could be well located in the broader framework of the big five personality traits (3-30% overlapping variance). Of course, playfulness does not exist independently from these broader traits, but the overlap is far from redundancy. All facets were associated with *Extraversion*, but there was no association with *Agreeableness*. The pattern of correlations differed for the single facets (e.g., *Intellectual* playfulness was also characterized by *Emotional Stability*).

Limitations. Most of the data collected were self-reports and, thus, findings may be affected by a joint method-bias. Study 1 has addressed some aspects of validity and reliability, while others are still open (e.g., a MTMM-approach). In particular, the relationships among similar constructs such as curiosity, spontaneity, or humor need more elaborate testing. The test-retest reliability has only been tested for 12 selected items (based on their corrected item-total correlation) and, thus, findings are preliminary (the reliability was low for Other-directed playfulness). Finally, there are also other instruments in the field, which have not yet been tested jointly with the OLIW. The male:female ratio is not balanced in all samples and participants were generally well-educated and this limits the generalizability of the findings.

Study 2

The main aim of this study is comparing self-ratings of the OLIW with ratings from knowledgeable others. It was tested whether the level of agreement for the OLIW is in the range reported for other personality traits. For example, agreement between self- and peer reports for the big five personality traits typically ranges between .46 (*Agreeableness*) and .62 (*Extraversion*; Connolly et al., 2007). To the best of the authors' knowledge there are no data on the self and peer convergence in playfulness with the exception of the *Need for Play*-scale of the *Personality Research Form* (PRF; Jackson, 1984). Ostendorf and colleagues (1986) report coefficients between .40 and .75 (mean = .63) across five samples with six peer-ratings for the German PRF (Stumpf et al., 1985).

They report analyses for judgments by three (mean = .57) and one (mean = .44) peer(s) with findings in the same direction. Using a single item rating for the peer ratings, Fekken and colleagues (1987) found a convergence of .22. These findings are roughly in the range that could be expected for this study (taken the lower reliability of single item ratings into account).

Method

Participants

Overall, 235 dyads of target persons and peer-raters participated in the study; nine had to be excluded because of irregular answer patterns either on the side of the self- or the peer-raters. The 226 participants in the final self-rating sample (*Sample 1*; 53 men, 173 women) had a *mean* age of 33.9 ($SD = 14.5$; 18-73). Of these, 49.1% held an academic degree, 23.9 a diploma qualifying them to attend a university, and 24.3% had a completed vocational training; others had basic school years only (2.7%). More than half (61.2%) were married, 22.4% were in a relationship, but not married, 13.4% were single, and 3.0% were divorced.

The *mean* age of the peer-raters (99 men, 124 women; three did not indicate their gender; *Sample 2*) was 36.2 ($SD = 14.8$; 16 to 38 years; 30 provided no information on their age). Overall, 17.9% were in a romantic relationship with the target person, 4.5% were siblings, 1.5% were other family members, and 13.4% provided ratings for a close friend (others provided no information on their relationship status). They indicated having known the target person for 13.9 years on average ($SD = 11.9$.) with a range of 10 months to 60 years. Peer-raters were asked to rate on a 7-point scale (1 = “not at all,” 7 = “excellent”) how well they know the target person; > 95% of the ratings were ≥ 5 and the lowest rating was 3 ($M = 6.22$, $SD = 0.85$).

Instruments

The participants in the self-ratings sample completed the OLIW, while the knowledgeable others (e.g., friends, romantic partners, or family members) completed a peer-rating version, which

was developed for this study (reliabilities self/peer: *Other-directed* $\alpha = .71/.73$; *Lighthearted* $\alpha = .72/.78$; *Intellectual* $\alpha = .71/.73$; *Whimsical* $\alpha = .74/.81$).

Procedure

Data were collected online (using SurveyMonkey), advertised as a study on playfulness and personality. Participants were asked to invite a knowledgeable person to complete the peer-ratings. They were offered a feedback on the self-ratings, but peer-raters were assured that their ratings would not be shared with the target person.

Results

Table 5 shows that the correlation coefficients for the homologous scales were in the expected range. There were some notable associations outside the main axis. For example, self-rated *Lighthearted* playfulness demonstrated a robust positive relationship with *Intellectual* playfulness.

Insert Table 5 about here

Discussion

The expectations for the overlap between self- and peer-ratings in the OLIW were met (coefficients were between .44 and .57) and if averaged across the four scales (mean = .49) this is about the range Angleitner et al. (1986) reported for *one* peer rating for the *Need for Play*-scale (i.e., .44 across five samples). Taking the reliability of the measures into account, it would be unlikely that the convergence reaches unity. The numerically largest overlap was found for *Whimsical* playfulness, which may be comparatively easy to observe in everyday situations (e.g., when being expressed in preferences for odd or grotesque objects and/or contents).

A *limitation* of the study is having only *one* peer-rating. A larger sample size would allow computing separate analyses depending on the type of acquaintance. One might argue that specific types of playfulness (e.g., *Other-directed* PF) are differently expressed when being with a specific

person (e.g., one's romantic partner vs. colleagues at work). The sample consists of people that were interested (self-selected) in participating in an online positive psychology program and that may have had an impact on the findings.

Study 3

Study 3 tests the association of the OLIW with actual playful behavior (averaged across 14 days). Wu and Clark (2003) examined the relation of trait *Aggression*, *Exhibitionism*, and *Impulsivity* and daily reported behavior (using a newly developed behavior record) in 197 US undergraduates. They found correlations between .34 (BPAQ *Hostility*) and .53 (BPAQ Total score) for their trait measures of *Aggression* and the respective aggregated behavioral ratings; coefficients were between .46 (SNAP *Exhibitionism*) and .55 (NPI *Exhibitionism*) for the two *Exhibitionism* scales, and for the *Impulsivity* measures, they were between .17 (BIS-11, *Hostility*) and .51 (SNAP *Impulsivity*).

The present study aims at (a) replicating Wu and Clark's (2003) findings, but more importantly, (b) extending the study by including ratings for playfulness. The study of the relationship between *Aggression* and playfulness is of particular interest in light of Chick's (2001) signal theory of adult playfulness (i.e., seeing playfulness as a sign of nonaggressiveness and fecundity). Hence, it was expected that playfulness is negatively associated with trait measures of *Aggression*—with a potential exception for *Whimsical* PF, which may be associated with the (playfully intended) breaking of rules, or overstepping boundaries. This should not be reflected in *Hostility* towards others, but in “taking risks” when interacting with others (e.g., joking or commenting on others). In Wu and Clark (2003), the items “drew attention to myself,” or “showed off in the company of others” demonstrated particularly high convergence with trait measures of *Exhibitionism*. Given that earlier conceptualizations of playfulness incorporate *Expressive* components (e.g., Glynn & Webster, 1992) that could also be retrieved in psycho-linguistic accounts (Proyer, 2012a, 2014a), it was decided to test the OLIW against such behaviors in extreme variants

(i.e., *Exhibitionism*). Low to medium size associations were expected for the relationship with *Exhibitionism*; especially, for the more overt types of PF (*Other-directed*, *Whimsical*). There is also earlier work in which playfulness is associated with *Impulsiveness* (e.g., Barnett, 2007; Glynn & Webster 1992; Proyer, 2012a) and, therefore, associations with this trait were of interest, too. It was expected that there would be low to moderate associations of the OLIW-scales with *Impulsiveness*—with the exception of *Lighthearted* PF. Not liking to plan ahead, but rather enjoying improvising if necessary, and a certain level of restlessness were expected to be part of what constitutes *Lighthearted* playfulness.

Method

Participants

A total of 295 students (mostly psychology undergraduates) entered the study. Of these, $n = 276$ (45 men, 231 women) completed 10 or more daily measures and were considered for the further analyses. Their mean age was 22.2 years ($SD = 4.07$; 18 to 46 years).

Instruments

As in the other studies, the OLIW (*Other-directed*: $\alpha = .70$; *Lighthearted*: $\alpha = .72$, *Intellectual*: $\alpha = .61$; *Whimsical*: $\alpha = .74$), the *Short Measure of Adult Playfulness* (SMAP; Proyer, 2012; $\alpha = .85$), and the *Playfulness Scale for Young Adults* (PSYA; Barnett, 2007; *Gregarious*: $\alpha = .71$; *Uninhibited*: $\alpha = .71$; *Comedic*: $\alpha = .68$; *Dynamic*: $\alpha = .62$) were used.

The *Need for Play* scale (16 items) of the *Personality Research Form* (Jackson, 1984; German: Stumpf et al., 1985) was used. High scores indicate doing many things “just for fun,” or spending a good deal of time participating in games, sports, social activities, and other amusements; (e.g., “People consider me a serious, reserved person”, reversely scored). Answers are given in a “true”/“false” answer format ($\alpha = .74$). Participants also completed the *Need for Aggression* scale (enjoying combat and argument, being easily annoyed; $\alpha = .60$), *Impulsivity* (acting without

deliberation, giving vent readily to feelings and wishes; $\alpha = .67$), and *Exhibitionism* (wanting to be the center of attention, enjoying having an audience; $\alpha = .77$).

The *Buss–Perry Aggression Questionnaire* (BPAQ; Buss & Perry, 1992; German translation of the item: Amelang & Bartussek, 1997) consists of 29 items and utilizes a 5-point answer format (1 = “*extremely uncharacteristic of me*,” 5 = “*extremely characteristic of me*”). Internal consistencies were .86 (*total score*), .80 (*Physical Aggression*), .67 (*Verbal Aggression*), .80 (*Anger*), and .78 (*Hostility*).

The *Exhibitionism* scale of the *Narcissistic Personality Inventory* (NPI; Raskin & Hall, 1979; German: Schütz et al., 2004) consists of seven items in a “*true*”—“*false*” answer format ($\alpha = .60$, this sample).

The *Barratt Impulsiveness Scale-Version 11* (BIS-11; Patton et al., 1995) consists of 30-items; Spinella (2007) developed a 15-item short form that has the same factor structure as the original version (German: Meule et al., 2011). They provide support for satisfactory reliabilities, and validity (factorial and convergent). It utilizes a 4-point answer format from 1 = “*rarely/never*” to 4 = “*always/always*” and comprises a total score ($\alpha = .77$, this sample), and scores for *Attentional* ($\alpha = .64$), *Motor* ($\alpha = .77$), and *Nonplanning Impulsiveness* ($\alpha = .79$).

Wu and Clark’s (2003) *behavior records* for *Aggression* (18 items), *Exhibitionism* (17), and *Impulsivity* (20) were used; the authors state: “Each item of this instrument consists of a short phrase that describes a particular behavior. Participants were instructed to indicate whether or not they performed each behavior for a given day. Items for the instrument were written and selected explicitly to target daily behaviors” (p. 238). Participants have to read each statement each evening (before going to sleep) for 14 consecutive days and indicate whether they have pursued this activity or not. Marti and Proyer (2015) derived 22 ratings for playful behavior that were also administered.

Hence, participants completed daily ratings for 77 behaviors; item samples are given in the results section. All items were presented in a random order.

Procedure

Wu and Clark's (2003) rating forms were translated to German in a translation-back-translation approach. As Wu and Clark worked with students, the items seemed appropriate for use with students in a German-speaking university, taking regional specificities into account. Marti and Proyer (2015) developed an initial list of 60 playful behaviors that could be pursued on a daily basis. The behaviors were mainly derived from a literature review¹ and existing databases (Proyer, 2012a, 2014a; Proyer & Jehle, 2013). This list was given to 170 undergraduate psychology students (148 women; $M = 23.9$, $SD = 6.6$) in a pre-study. They were asked to indicate whether they had pursued the respective activities in the past 24 hours and completed Wu and Clark's *Exhibitionism*-ratings to avoid the occurrence of answer tendencies by using too many similar items. Those behaviors were selected that demonstrated (a) high loadings on the first unrotated principal component; (b) sufficiently high occurrences (i.e., reflect potentially daily behaviors); and (c) covered different aspects of playfulness. This led to a selection of 22 playful behaviors that were used in the present study. The full list is available from the author. Participants completed the behavior ratings for 14 consecutive days and the trait measures on the first day.

Results

Preliminary analyses. Aggregated scores were computed for the behavior ratings of *Play*, *Aggression*, *Exhibitionism*, and *Impulsivity* and the ratings were subjected to a Principal Component Analysis (PCA). A potent first factor emerged for the *Play* ratings (eigenvalue = 8.97, 40.77% explained variance, EV); four factors exceeded unity (i.e., 1.62, 1.58, and 1.12) and the scree-test suggested a one-factorial solution. The loadings of the 22 items on the first unrotated principal

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¹ The author is grateful to Dr. Lynn Barnett for sharing her "What You Like To Do in Your Free Time"-leisure activities measure (personal communication; April 24, 2014).

component (FUPC) ranged between .50–.77 (median = .64). The findings were similar for *Aggression*; eigenvalue of the first factor = 5.03 (EV = 27.96%); others exceeding unity were 1.58, 1.34, 1.21, and 1.12. The loadings on the FUPC ranged between .15–.72 (median = .51). One of the *Exhibitionism* ratings (i.e., “Tried not to be noticed/kept a low profile;” reverse coded) demonstrated a negative loading on the FUPC and was not further considered. The PCA revealed a strong first factor (eigenvalue = 4.74, EV = 29.60%; others ≥ 1.00 were 1.82, 1.48, and 1.11). The loadings on the FUPC ranged between .31–.74 (median = .56). Finally, findings by Wu and Clark (2003) for a two-factor solution for the *Impulsiveness*-ratings were replicated; the first five eigenvalues were 2.83 (EV = 14.16%), 2.14 (EV = 10.72%), 1.58, 1.34, and 1.25. Two factors were extracted and rotated to the Oblimin-criterion ($\delta = 0$). An inspection of the loading matrices suggested that the two factors could be labeled in accordance to Wu and Clark; namely, *Failure to plan* (e.g., “made a list of things to do”), and *Carefree/Spontaneous* (e.g., “bought something on the spur of the moment”). The factor scores were uncorrelated ($r = .08$); four items yielded double loadings with differences $\leq .07$ and a further one was .14, while the others were all $\geq .22$. Given the low correlation of the factor scores, it was decided not to discard any of these items. Table 6 gives the correlations of the OLIW with the trait measures used in this study.

Insert Table 6 about here

Overall, findings from Study 1 were well replicated. The correlations with the *Need for Play*-scale were in the expected direction. The OLIW existed widely independently from *Aggression*; except for *Whimsical* playfulness (verbal, physical). *Hostility* was negatively correlated with all OLIW scales, but *Whimsical* playfulness existed unrelated from *Hostility*. There were positive associations of the OLIW with *Exhibitionism* (PRF), while coefficients were numerically lower for the *Exhibitionism* scale of the NPI. As expected, *Impulsivity* was positively associated with

playfulness. Numerically largest relations were found for *Lighthearted* playfulness (not planning ahead, physical *Impulsivity*). However, there was a differentiated pattern as, for example, *Intellectual* and *Whimsical* playfulness existed broadly unrelated to low planning/attention (BIS). Mainly the *Other-directed* and the *Lighthearted* playfulness demonstrated robust relations with *Impulsivity*.

Convergence of the trait measures and the aggregated behavior records. Table 7 gives the correlation coefficients between the aggregated behavior ratings and the trait measures. All OLIW facets were positively correlated with the aggregated play behavior ratings (8—14% shared variance). At the level of single behaviors, *Other-directed* PF demonstrated robust associations with, for example, “having fooled around with others” ($r = .37$), or “having teased someone” ($r = .26$); *Lighthearted* playfulness was associated with “having skylarked” ($r = .32$), or “did something childish” ($r = .26$); *Intellectual* playfulness was associated with “played with a new idea” ($r = .39$), or “was imaginative” ($r = .25$); and *Whimsical* PF with “did something unconventional to break the routine” ($r = .28$), or “was amused by a strange/odd observation I made” ($r = .23$; all $p < .001$). As expected, *Lighthearted* PF demonstrated robust relations with *Impulsiveness* (total score and nonplanning). The relationships with *Aggression* and *Exhibitionism* were lower in size. The multiple squared correlation coefficient of the aggregated play ratings and the OLIW was .26.

The SMAP and the *Need for Play*-scale were also positively correlated with the aggregated play ratings (14%—8% shared variance). Two out of the four PSYA scales were robustly positively correlated with the play ratings (*Uninhibited/Comedic*; i.e., 14/19%), while the other two yielded lower associations (1.7%—3.6%). While the *Uninhibited* facet also demonstrated robust relations with *Impulsiveness* (nonplanning, carefree), *Comedic* playfulness was also positively associated with the *Exhibitionism* ratings. Overall, two out of the four PSYA scales demonstrated relations in the expected direction ($R^2 = .25$).

All trait measures of *Impulsiveness* were positively correlated with the aggregated Play ratings (shared variances between 7%–14%). The multiple squared correlation coefficient of the playful behaviors and the other behavior ratings (Total score for *Impulsiveness* only) was .35 indicating that they were overlapping, but not redundant. *Impulsiveness* (Total score) existed independently from *Aggression* and *Exhibitionism*, while the latter two were positively correlated.

Wu and Clark's (2003) findings were widely replicated, but the correlation coefficients were numerically smaller for most of the associations. The trait measures for *Aggression* demonstrated the expected relationship, but its verbal variant only yielded low associations (2.6% shared variance). The trait measures for *Exhibitionism* were in the expected direction with only negligible correlations on the other behavior scores. The BIS-11 (*total score, Motor Impulsiveness*) and the *Impulsivity* scale of the PRF were robustly positively correlated with the aggregated play behaviors.

Insert Table 7 about here

Discussion

This study lends further support to the convergent and discriminant validity of the OLIW. Correlations with other trait measures of *playfulness, Aggression* and *Exhibitionism* were in the expected range. *Intellectual* and *Whimsical* playfulness demonstrated low relations with *Impulsiveness* (except for *Motor Impulsiveness*). As expected, coefficients for *Lighthearted* and *Other-directed* playfulness were numerically higher. Especially, *Lighthearted* playfulness demonstrated a robust relationship with *low* planning intentions and motor *Impulsiveness*. These behavior tendencies (e.g., not liking to plan ahead) require compensatory activities such as improvisation that seem to be particularly enjoyed by those high in *Lighthearted* PF. Playfulness has been related to spontaneous, uninhibited, or carefree types of behaviors in earlier conceptualizations (e.g., Barnett, 2007; Lieberman, 1977; Proyer, 2012a, 2014a). One might also speculate that the fast

processing of information could be a common core of *Impulsiveness* and *Lighthearted* playfulness. Overall, it seems fruitful to study this association in more detail in the future.

To the best knowledge of the author, this is the first study to test the relationship of playfulness questionnaires to aggregated ratings of playful behavior. The OLIW demonstrated robust positive relations with the play behavior records (averaged across 14 days). As expected, the *Lighthearted* facet also demonstrated a positive relationship with *Impulsiveness* (mainly nonplanning). Findings for the SMAP and the *Need for Play* scale (PRF) were in the expected direction as well as for two out of the four scales of the *Playfulness Scale for Young Adults* (*Uninhibited*, *Comedic*).

Findings for the relationship of the behavior records for *Aggression*, *Exhibitionism*, and *Impulsivity* are widely in line with Wu and Clark (2003). However, the correlation coefficients tended to be numerically lower in size in this study. One finding needs further consideration: There was a robust positive relationship between the aggregated Play records and trait measures of *Impulsivity* (mainly the total score of the BIS-11, motoric *Impulsivity*, and the respective scale of the PRF). One might argue that the *Impulsiveness* measures also cover a certain degree of play behaviors. Of course, it needs to be mentioned that this is the first study in which the *play behavior* record has been used. Therefore, one might also argue that the play ratings were biased towards *Impulsiveness* and that the correlation coefficients reflect this bias in the development of the rating list.

One limitation of this study is that there is limited experience with the play record and that its validity needs further testing (see Marti & Proyer, 2015). Findings are based on a student sample with more females than males and the generalizability of the findings is limited. Of course, the ratings on the actual play behavior were retrospective (provided in the evening) and it needs to be emphasized that they were also based on the self-reports of the participants and that the data are not from direct observations of behavior.

General Discussion

The findings from these three studies are encouraging and the use of the OLIW seems promising for future research purposes. For example, other models also consider (manifest) joy (e.g., Lieberman, 1977) as a part of playfulness or propose joy as the emotional response to play or playful behaviors. This limits emotional experiences associated with playfulness to one specific type of positive emotion while disregarding others. Restricting adult playfulness to *joy* seems too narrow for advancing the field further and it is argued that it may also be associated with other types of positive emotions (e.g., interest, love, or contentment).

The OLIW allows for the exploration of hitherto less well studied areas; for example, the field of romantic relationships. Chick (2001) argues that adult playfulness is a desired personality trait in potential partners for long-term relationships. Lay people can provide examples of using playfulness in their romantic relationships (e.g., flirting, playful teasing, encouraging or comforting the partner; Proyer, 2014b). Especially, *Other-directed* playfulness should be studied as a contributor to relationship satisfaction/quality, but also indicators such as the duration of the relationship (cf. Proyer, 2014d). Of course, playfulness may also play a role in other forms of social interactions (e.g., at work, in friendships, sport teams, or other communities). The study of *Lighthearted* playfulness may focus on resilience and coping strategies. The latter has already received support in the literature (e.g., Proyer, 2014b; Qian & Yarnal, 2011). One might argue that, especially, *Lighthearted* playfulness facilitates coping with personal and environmental stressors. It needs mentioning that *Lighthearted* PF may also be associated with *negative* consequences such as a greater inclination towards risky or addictive behaviors. Thus, the study of adult playfulness may also be extended towards at least potentially harmful behaviors.

More research seems warranted for the *Intellectual* types of playfulness. For example, its role in innovation at work, science, design, in the arts and aesthetics, or in its relationship with a need for cognition, or in problem solving (e.g., Berlyne, 1974; Bruner, 1972; Yu et al., 2007)—to name but a few. Finally, there are also other research directions for *Whimsical* PF. Those high in this type of

playfulness should be good observers of their environment and be able to transform these observations into entertaining experiences—for themselves, but also for others. Their preference for unusual activities, objects, or persons may be reflected in special aesthetic preferences, which, in turn, could be expressed in artistic or other types of behaviors.

This brief overview could only highlight a few of the potential areas of interest for future research and, of course, there are also many other areas where this line of research would be of interest. The present studies show that the OLIW is a promising instrument for the study of adult playfulness and can, hopefully, contribute to the advancement of the field.

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Table 1. Reliability, Distribution Statistics, and Correlates with Age and Gender in the two Samples.

	Sample 1				Sample 2			
	OTD	LIG	INT	WHI	OTD	LIG	INT	WHI
Alpha	.66	.79	.68	.78	.73	.76	.69	.78
CITC L	.17	.45	.25	.30	.18	.41	.16	.21
CITC H	.48	.60	.55	.63	.58	.58	.57	.63
Mean	5.29	4.52	4.72	4.71	4.96	4.40	4.59	4.67
SD	0.86	1.04	0.90	0.98	0.91	0.96	0.84	0.94
SK	-0.68	-0.36	-0.20	-0.26	-0.52	-0.19	0.04	-0.37
Kurtosis	0.65	-0.03	0.02	-0.19	0.33	-0.13	-0.21	0.17
Age	-.19**	.16**	.33**	.11**	-.23**	.06*	.12**	.03
Sex	.11**	-.04	.01	-.06	.02	-.06*	-.02	.00

Note. $N = 597$ - 628 (Sample 1), $N = 1,168$ (Sample 2). OTD = Other-directed; LIG = Lighthearted; INT = Intellectual; WHI = Whimsical; Alpha = Cronbach-alpha (internal consistency); CITC L/H = lowest/highest corrected item-total correlation; SK = Skewness; Age = Correlation with Age (Pearson); Gender = Correlation with Sex (1 = men; 2 = women; Spearman).

* $p < .05$; ** $p < .01$.

Table 2. Convergent Validity of the OLIW: Pearson Correlation Coefficients With Three Playfulness Questionnaires

	Intellectual	Lighthearted	Other-directed	Whimsical
SMAP	.50**	.49**	.64**	.45**
PSYA				
Gregarious	.31**	.31**	.38**	.12
Uninhibited	.30**	.48**	.37**	.41**
Comedic	.30**	.34**	.70**	.27**
Dynamic	.34**	.25**	.30**	.16*
APS				
Spontaneous	.41**	.67**	.48**	.43**
Expressive	.26**	.41**	.47**	.31**
Fun	.39**	.40**	.52**	.18**
Creative	.44**	.30**	.36**	.42**
Silly	.27**	.44**	.48**	.33**

Note. $N = 462$. SMAP = Short Measure of Adult Playfulness; PSYA = Playfulness Scale for Young Adults; APS = Adult Playfulness Scale.

* $p < .05$; ** $p < .01$.

Table 3. Correlations (Controlled for Age and Gender) Between Facets of the OLIW and the Big-Five Personality Traits.

	Extraversion	Agreeableness	Conscientiousness	ES	Culture
Other-directed	.42**	.11*	-.07	.18**	.30**
Lighthearted	.25**	.09	-.41**	.34**	.27**
Intellectual	.20**	.10*	-.08	.30**	.41**
Whimsical	.12**	-.05	-.17**	.08	.50**
R^2	.19	.03	.18	.15	.30

Note. $N = 459$. ES = Emotional Stability.

** $p < .01$; * $p < .05$.

Table 4. Test-retest Correlation for the OLIW and Internal Consistency at Baseline (Three Items per Scale).

	Alpha	1 Week	2 Weeks	1 Month	3 Months
Other-directed	.56	.77**	.79**	.78**	.74**
Lighthearted	.77	.80**	.81**	.82**	.77**
Intellectual	.75	.73**	.74**	.74**	.67**
Whimsical	.77	.87**	.85**	.84**	.84**

Note. $N = 191-199$. Alpha = Internal consistency (baseline).

* $p < .05$; ** $p < .01$.

Table 5. Correlations of Self- and Peer-ratings in the OLIW.

Self-ratings	Peer-ratings			
	Other-directed	Lighthearted	Intellectual	Whimsical
Other-directed	.44**	.13*	.08	.04
Lighthearted	.18**	.49**	.23**	.11
Intellectual	.24**	.36**	.44**	.21**
Whimsical	.10	.25**	.24**	.57**

Note. $N = 226$ dyads.

* $p < .05$; ** $p < .01$.

Table 6. Convergent and Discriminant Validity of the OLIW: Correlations with Trait Measures for Adult Playfulness, Aggression, Impulsiveness, and Exhibitionism (Controlled for Age and Gender)

	Other-directed	Lighthearted	Intellectual	Whimsical
SMAP	.60**	.41**	.44**	.24**
PRF PLAY	.52**	.46**	.28**	.14*
PSYA				
Gregarious	.38**	.32**	.23**	.06
Uninhibited	.31**	.51**	.27**	.52**
Comedic	.60**	.36**	.30**	.22**
Dynamic	.21**	.15*	.27**	.22**
PRF AGG	.09	-.05	-.08	.13*
BPAQ				
Total	-.02	-.09	-.11	.18**
Physical Aggression	.10	.02	.03	.22**
Verbal Aggression	.06	.12*	.09	.30**
Anger	.04	-.01	-.10	.11
Hostility	-.22**	-.29**	-.26**	-.04
PRF EXH	.31**	.22**	.28**	.28**
NPI EXH	.19**	.13*	.12*	.19**
BIS-11(15)				
Total	.33**	.61**	.16*	.23**
Nonplanning	.20**	.51**	.14*	.11
Motor	.40**	.63**	.23**	.32**
Attentional	.12*	.18**	-.03	.09
PRF IMP	.33**	.53**	.18**	.29**

Note. $N = 295$. SMAP = Short Measure of Adult Playfulness; PRF = Personality Research Form; BPAQ = Buss–Perry Aggression Questionnaire; EXH = Exhibitionism; NPI = Narcissistic Personality Inventory; BIS-11(15) = Barratt Impulsiveness Scale-Version 11; PRF IMP = Impulsivity.

* $p < .05$; ** $p < .01$.

Table 7. Correlation Coefficients Between Aggregated Behavior Ratings of Play, Aggression, Exhibitionism, Impulsiveness and Trait Measures (Controlled for Age and Gender)

	Play	Aggression	Exhibitionism	Impulsiveness	NP_I	CAR
OLIW						
Intellectual	.29**	.02	.04	.17**	.15*	.10
Lighthearted	.38**	.01	.09	.32**	.29**	.18**
Other-directed	.33**	.08	.13*	.20**	.15*	.16*
Whimsical	.36**	.15*	.13*	.12	.08	.16*
SMAP	.38**	.14*	.14*	.19**	.13*	.19**
PRF PLAY	.28**	.00	.08	.27**	.26**	.13*
PSYA						
Gregarious	.19**	-.13*	.05	.04	.04	.01
Uninhibited	.38**	.13*	.17**	.29**	.22**	.25**
Comedic	.44**	.18**	.27**	.14*	.08	.19**
Dynamic	.13*	-.06	.04	-.05	-.07	.00
BPAQ						
Total	.03	.43**	.12*	.00	-.09	.19**
Physical Aggression	.07	.36**	.16*	.09*	.01	.10**
Verbal Aggression	.13*	.16*	.08	.03	.02	.08
Anger	.05	.40**	.12*	.00	-.11	.20**
Hostility	-.12*	.25**	-.01	-.09	-.15*	.05
PRF AGG	-.04	.33**	.09	.02	.00	-.11
NPI EXH	.12*	-.10	.34**	.06	-.03	-.12*
PRF EXH	.17**	.02	.26**	.11	-.07	-.09
BIS-11						
Total	.27**	.09	.10	.42**	.31**	.33**
Nonplanning	.14*	-.05	-.01	.39**	.37**	.17**
Motor	.37**	.14*	.20**	.30**	.17**	.33**
Attention	.07	.12*	.04	.22**	.12*	.24**
PRF IMP	.27**	.13*	.14*	.38**	.27**	.30**

Note. $N = 276$; NP_I = Nonplanning Impulsiveness, CAR = Careless; SMAP = Short Measure of Adult Playfulness; PRF = Personality Research Form; PSYA = Playfulness Scale for Young Adults; BPAQ = Buss–Perry Aggression Questionnaire; AGG = Aggression; NPI = Narcissistic Personality Inventory; EXH = Exhibitionism; BIS-11 = Barratt Impulsiveness Scale-Version 11; PRF IMP = Impulsivity.

* $p < .05$; ** $p < .01$.