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Development and initial assessment of a short measure for adult playfulness: The SMAP

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ABSTRACT

This study reports an initial evaluation of a new short measure for adult playfulness (SMAP). In data from a construction ($N = 266$), and two replication samples ($N = 147$ students, $N = 215$ adults), a one-dimensional solution showed the best fit for the data and satisfactory internal consistency ($.80-.89$) was found (test–retest correlation = $.74$; 12–16 weeks). Younger adults scored higher in playfulness than older ones. The SMAP demonstrated robust correlations with measures for adult playfulness and the need for play. Cheerfulness and culture along with low seriousness and low conscientiousness were its best predictors. In ratings of an unordered work-space and a surrealist painting, playful adults expressed higher liking for and lower disapproval of these compared to non-playful adults. Overall, the new scale yielded good psychometric properties and first evidence on its validity was encouraging. The SMAP has been developed for an economic, global assessment of adult playfulness, which is still an understudied topic in personality research.

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1. Introduction

Adult playfulness is an important but understudied topic in research in personality. It is defined as “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; p. 955). While play is an observable behavior, playfulness is seen as an individual differences variable, which, according to Barnett and others, enables people to transform a situation or an environment in a way to allow for enjoyment or entertainment. Most of the research in this area has been conducted with children but playfulness has also been successfully studied in adults. The distinctiveness of this characteristic has been established using a broad range of methodologies; e.g., questionnaire-based studies, focus groups, or lexical approaches (e.g., Barnett, 2007; Glynn & Webster, 1992; Proyer, in press). Relations to intrinsic motivation, creativity, flow-experiences, quality of life, or academic performance have been described frequently (e.g., Barnett, 2007; Csikszentmihalyi, 1975; Proyer, in press, 2011, 2012; Proyer & Ruch, 2011; Proyer, Ruch, & Müller, 2010). It is argued that more research in this area is needed for a better understanding of the construct itself but also on its correlates and consequences.

There is no agreement, however, on how to assess adult playfulness. Additionally, there is no well-validated short measure for assessing the concept in an economical way. In an effort to narrow

this gap, a one-dimensional measure is presented in this study. Its items have been rationally constructed for a global self-assessment of playfulness. Items were selected on the notion that playfulness (a) can be observed by the person him-/herself and (b) by other people; (c) that playful adults frequently exhibit playful behavior; (d) can easily change from a non-playful (or serious) frame of mind to a playful one; and (e) know situations in which they were fully absorbed by a playful activity. Thus, playfulness is understood and assessed here as an easy onset and high intensity of playful experiences along with the frequent display of playful activities.

Convergent validity was examined by computing correlates with Glynn and Webster's (1992) *Adult Playfulness Scale*, Jackson's (1984) *need for play-scale*, and a list adjectives identified to be representative of playfulness (Barnett, 2007). Humor has been seen as a specific variant of playfulness (McGhee, 1999; Proyer & Ruch, in press) and it was, therefore, also considered in this study. The trait scales of the *State-Trait-Cheerfulness-Inventory* (STCI; Ruch, Köhler, & van Thriel, 1996) measure the habitual dispositions for lowered (cheerfulness) and enhanced (seriousness, bad mood) thresholds for the induction of exhilaration and laughter. While a positive relation between playfulness and cheerfulness was expected, it is argued that seriousness covers characteristics that oppose playfulness (e.g., not being mentally set for amusement). The same is true for bad mood and its facets; sadness and ill-humouredness are seen as contributing negatively to exhibiting playfulness.

A measure of the big five personality dimensions was used in order to test the localization of playfulness in this framework. Based on earlier studies (e.g., Barnett, 1991; Proyer, 2012), it is expected that higher scores in the new measure are positively

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associated with extraversion, higher culture but lower conscientiousness. Furthermore, lower yet positive relations of playfulness were expected to emotional stability and agreeableness.

In a more exploratory part, the new scale was related to ratings of preferences for and aversiveness of two photographs showing *structured* (ordered, well-organized) in comparison to *unstructured* (unordered, disorganized) workplaces. Based on earlier work on personality characteristics of playful adults (e.g., Barnett, 2007; McGhee, 1999; Proyer, in press, 2012), it is expected that those higher in playfulness show a higher preference for and lower aversiveness of the unstructured workplace than those lower in playfulness. The same hypotheses were tested for ratings (preference/aversiveness) of a painting consisting of geometric figures (rectangles of different sizes set together in a clear structure; *geometric*) and a surrealistic painting (depicting different forms without a clear structure; *surrealistic*). While the playful participants should express their liking for and lower disapproval of the unstructured working place and the surrealistic painting, no differences were expected for the ordered workplace and the geometric painting.

2. Materials and methods

2.1. Sample

The *construction sample* (Sample 1) consisted of 266 adults (18–85 years; $M = 33.5$, $SD = 14.0$); about 40% were males ($n = 107$). Slightly more than one third were married or lived with a partner (35.3%), more than half were single or not married (57.1%). More than half held a degree from university or were currently at university (52.6%), further 17.7% held a school-leaving diploma qualifying for attending university, 22.9% had a completed vocational training.

Sample 2 (replication sample I) consisted of 147 psychology students (undergraduates) between 19 and 58 years ($M = 24.0$, $SD = 6.1$; six did not indicate their age); 122 were females and 20 were males (5 did not indicate their gender).

Sample 3 (replication sample II) consisted of 215 adults (18–65 years, $M = 29.2$, $SD = 9.0$). More than one quarter were males ($n = 61$, 28.4%). About one third held a degree from university ($n = 72$, 33.5%) and further 104 (48.4%) held a school-leaving diploma qualifying for attending university.

Sample 4 (test-retest sample) consisted of 30 adults (5 males, 25 females) between 19 and 65 years ($M = 35.0$, $SD = 13.5$). A third held a degree from University while only one person had a school leaving diploma that would not qualify her for attending a university.

2.2. Instruments

The *Short Measure of Adult Playfulness* (SMAP) consists of five items that allow for a global assessment of adult playfulness. All items (see Table 1) are positively keyed and utilize a four-point scale (1 = “strongly disagree,” 4 = “strongly agree”).

The *Adult Playfulness Scale* (APS; Glynn & Webster, 1992) is a list of 32 adjectives (7-point scale; 25 items are being scored). Its subscales are *spontaneous* (e.g., spontaneous vs. disciplined; alpha-coefficient in this sample = .76), *expressive* (e.g., bouncy vs. staid; $\alpha = .66$), *fun* (e.g., bright vs. dull; $\alpha = .63$), *creative* (e.g., imaginative vs. unimaginative; $\alpha = .63$), and *silly* (e.g., childlike vs. mature; $\alpha = .73$). Additionally, a total score was computed ($\alpha = .89$). Glynn and Webster report satisfactory reliability coefficients and data on convergent and predictive validity. As in Proyer, 2011, in press; Proyer & Ruch, in press) the German version of the instrument was used.

The *need for play scale* of the *Personality Research Form* (Jackson, 1984; German version by Stumpf, Angleitner, Wieck, Jackson, & Beloch-Till, 1985) consists of 16 items (e.g., “People consider me a

serious, reserved person”, reversely scored; this sample $\alpha = .82$) in a *true/false* answer format.

A list of *playfulness statements* was created using 15 adjectives identified by Barnett (2007) as being indicative for playfulness. They were rephrased into items (e.g., “active” into “I am an active person”; 1 = “strongly disagree,” 4 = “strongly agree”; $\alpha = .84$).

The component trait form of the *State-Trait-Cheerfulness-Inventary* (STCI-T; Ruch et al., 1996) consists of 106 items and assesses *cheerfulness* (e.g., “I like to hear the newest jokes and funny stories”), *seriousness* (“I very seldom act without a proper reason”), and *bad mood* (“People often have reason to ask if something is eating me”) in a four-point answer format (1 = “strongly disagree,” 4 = “strongly agree”). Each of those is made up of 5–6 facets. Reliability and validity of the STCI are well established. The main scales yielded high internal consistencies in this sample; i.e., $\alpha = .94$ for cheerfulness (facets were between .68 and .90; median = .77); seriousness = .88 (.51–.78; median = .67); and bad mood = .94 (.72–.86; median = .74).

The *Inventory of Minimal Redundant Scales* (MRS-25; Ostendorf, 1990) is a bipolar list of 25 adjectives for *Extraversion* (e.g., impulsive vs. restraint), *Agreeableness* (e.g., affirmative vs. oppositional), *Conscientiousness* (e.g., diligent vs. lazy), *Emotional stability* (e.g., robust vs. vulnerable), and *Culture* (e.g., inventive vs. conventional). Answers are given on a six-point scale (*very–quite–rather*). The authors report high internal consistencies of the scale and provide support for its validity. The MR-scales are frequently used in research and alpha-coefficients were $\geq .73$ (median = .80).

Participants in sample 2 completed four *ratings* for two work places (one being unorganized and one being highly organized) regarding their preference/liking and their disapproval for working in such an environment. Additionally, they were shown a picture of a clearly structured painting with geometric figures and a surrealistic painting. Ratings for their liking/disapproval of the painting were collected on a ten-point scale (1 = “not at all,” 10 = “very much approval”/“strong disapproval”).

Students in a course on psychometrics collected the data for sample 1 for course credit. Participants completed the SMAP, the need for play scale, the STCI, the MRS-25, and the adjectives derived by Barnett (2007). Data for sample 2 was collected in a lecture on psychometrics (SMAP and ratings of workplaces and paintings). Data for sample 3 was collected via the Internet. Participants in this sample completed the SMAP as part of a larger test battery. These data were used for a confirmatory factor analysis. Participants in sample 4 completed the SMAP at two time points (12–16 week interval) as part of a larger study in positive psychology. All data were collected in the German speaking part of Switzerland.

3. Procedure

The items of the SMAP were rationally developed. An initial set of 17 items was created addressing the five aspects described in the introductory section (i.e., observation by self and others, frequency, easy onset, and absorption of playfulness) and tested for semantic similarity and redundancy by the author. Twelve undergraduate students in a course on psychometrics commented on the items. They were pretested with a small number of students and young adults. This led to the final version of the SMAP. All data in the four samples were collected independently. None of the participants were paid for their services.

4. Results

Internal Structure: PCA. A principal component analysis was conducted in order to analyze the factorial structure of the SMAP. A very potent first factor emerged with an eigenvalue of 3.00 that

Table 1
Distribution of the Items and Total Score in the SMAP, Corrected-item Total Correlations, and Correlations with Demographics.

	Item 1	Item 2	Item 3	Item 4	Item 5	Total
<i>Sample 1</i>						
Mean	2.93	2.66	2.71	2.69	2.85	2.77
SD	0.79	0.84	0.83	0.80	0.86	0.64
Skewness	−0.49	−0.10	0.04	−0.03	−0.34	−0.16
Kurtosis	−0.03	−0.59	−0.72	−0.54	−0.53	−0.48
CITC	0.67	0.64	0.67	0.59	0.58	–
Sex	.04	−.04	.09	−.10	−.08	−.03
Age	−.23**	−.27**	−.23**	−.10	−.16**	−.26**
EDL	.08	.00	.11	.06	.13*	.10
<i>Sample 2</i>						
Mean	3.20	2.99	2.91	3.04	3.02	3.03
SD	0.67	0.70	0.71	0.80	0.89	0.89
Skewness	−0.41	−0.37	−0.25	−0.50	−0.41	−0.40
Kurtosis	−0.15	0.17	−0.14	−0.23	−0.84	−0.25
CITC	0.70	0.70	0.66	0.48	0.43	–
Sex	−.19*	−.18*	−.07	−.08	−.19*	−.19*
Age	−.16	−.15	−.23**	−.05	−.07	−.17*
<i>Sample 3</i>						
Mean	3.00	2.83	2.77	2.82	2.83	2.85
SD	0.76	0.78	0.81	0.85	0.88	0.68
Skewness	−0.52	−0.34	−0.24	−0.31	−0.24	−0.04
Kurtosis	0.83	−0.18	−0.40	−0.50	−0.74	−0.15
CITC	0.76	0.76	0.76	0.71	0.63	–
Sex	.03	.07	.05	−.02	−.09	−.03
Age	−.05	−.11	.05	.00	−.01	−.04
MLC						
F	6.27	7.04	3.09	8.23	2.14	7.37
p	.002	.001	.046	.0001	.119	.001
LSD	1 < 2 (0.37) 3 < 2 (0.28)	1 < 2 (0.39)	1 < 2 (0.26)	1 < 2 (0.43) 3 < 2 (0.27)	–	1 < 2 (0.42) 3 < 2 (0.29)

Note. $N = 225$ – 266 (sample 1), $N = 137$ – 142 (sample 2), $N = 215$ (sample 3); CITC = corrected item total correlation; sex (1 = male, 2 = female); EDL = educational level (1 = lowest, basic education, 5 = highest, university level). MLC = mean level comparisons (one-way ANOVA; $df[2, 620]$), LSD = post hoc test (Cohen's d).

Item 1 = "I am a playful person"; 2 = "Good friends would describe me as a playful person"; 3 = "I frequently do playful things in my daily life"; 4 = "It does not take much for me to change from a serious to a playful frame of mind"; 5 = "Sometimes, I completely forget about the time and am absorbed in a playful activity".

* $p < .05$.

** $p < .01$.

explained 59.90% of the variance (sample 1). None of the other eigenvalues exceeded unity (i.e., 0.72, 0.50, 0.46, and 0.34). The loadings of the five items on the first unrotated factor were .81, .79, .81, .73, and .73. Thus, the items reflected the intended one-dimensional structure very well. Principal component analyses for samples 2/3 supported this; eigenvalues of the first factor were 2.99/3.28 (explained variance: 57.78/65.50%; other eigenvalues: 0.75/0.69, 0.66/0.47, 0.39/0.31, and 0.31/0.26). The loadings on the first unrotated factor were .85/.86, .86/.87, .82/.84, .65/.75, and .59/.71.

Internal structure: Parallel analysis and CFA. For a more precise quantitative estimate for the number of factors that underlie the SMAP, a parallel analysis was conducted (Horn, 1965) with the data from all three samples. This procedure compares the eigenvalues of empirical components with those of components derived from random datasets with identical specifications (sample size, number of variables). In all three analyses only one component was retained, which provided further support for a one-factor solution.

A confirmatory factor analysis using Mplus 5.0 (Muthén & Muthén, 2007) was performed for sample 3. The MLR (Maximum Likelihood Robust) estimator was used and a model with one general factor for playfulness was tested. A multifaceted approach was used to evaluate the model fit (Hu & Bentler, 1999). All of the coefficients indicated a good model fit, $Chi-square = 437.25$, $df = 10$; $RMSEA = .07$, $SRMR = .03$; $NNFI = .95$. This analysis supported the intended one-factor solution.

4.1. Item and scale characteristics

The SMAP yielded alpha-coefficients of .83, .80, and .89 in sample 1 to 3. There were robust intercorrelations among the items without indicating them as being redundant; e.g., ranging from .41 to .63 in sample 1 (median = .58; the median was .44/.53 in

sample 2/3). Table 1 gives the descriptive statistics, relations to demographics and the corrected item-total correlation (CITC) in the three samples.

The table shows that all items within the three samples yielded comparable mean scores and standard deviations. All were normally distributed. All CITCs were high (sample 1/2/3: median = .64/.66/.76). While neither gender nor the educational level varied significantly with playfulness, within sample 1, there was a significant negative correlation between age and playfulness ($r^2 = .10$, total score). Correlations with demographics in sample 2 should be interpreted conservatively as the variances were restricted in these samples regarding the male: female ratio as well as the age. Younger males tended to score higher in playfulness but none of the correlations exceeded an $r^2 = .05$. In sample 3, there were no correlations with demographics. Mean level comparisons among the three groups indicated differences in four out of the five items and the total scores. The younger participants (students) in sample 2 scored lower than participants from sample 1 and in three out of six comparisons also lower than those in sample 3.

4.2. Test-retest correlation

The test-retest correlation was computed based on sample 4 in a 12 to 16 week interval. Results were based on a small sample size and should be considered preliminary but indicated a high test-retest correlation, $r(28) = .74$, $p < .001$.

4.3. Convergent and divergent validity

The following analyses were based on sample 1. The total score of the APS correlated with $r(238) = .36$ with the need for play scale

Table 2
Convergent and Divergent Validity of the SMAP: Correlations With Indicators of Playfulness, Cheerfulness, Seriousness, Bad mood, and the Big Five.

	Pearson	Partial (Age)
Playfulness		
Adjectives (15)	.53**	.51**
Play (PRF) (16)	.23**	.16*
APS (25)	.57**	.54**
Spontaneous (6)	.52**	.50**
Expressive (6)	.36**	.36**
Fun (5)	.44**	.42**
Creative (3)	.39**	.40**
Silly (5)	.47**	.41**
STCI		
Cheerfulness (38)	.48**	.50**
CH1 (8)	.43**	.44**
CH2 (5)	.39**	.41**
CH3 (8)	.36**	.40**
CH4 (8)	.39**	.39**
CH5 (9)	.44**	.45**
Seriousness (37)	-.42**	-.39**
SE1 (6)	-.22**	-.19**
SE2 (7)	-.33**	-.31**
SE3 (7)	-.33**	-.31**
SE4 (5)	-.30**	-.25**
SE5 (6)	-.32**	-.28**
SE6 (6)	-.44**	-.41**
Bad mood (31)	-.24**	-.28**
BM1 (6)	-.16*	-.23**
BM2 (8)	-.16*	-.21**
BM3 (5)	-.27**	-.27**
BM4 (7)	-.19*	-.22**
BM5 (5)	-.27**	-.30**
MRS-25		
Agreeableness (5)	.14*	.19**
Conscientiousness (5)	-.33**	-.28**
Emotional Stability (5)	.19**	.23**
Extraversion (5)	.38**	.38**
Culture (5)	.47**	.44**

Note. $N = 213$ – 241 . Number of items in brackets. Adjectives derived from Barnett (2007); need for play scale (Personality Research Form); APS = Adult Playfulness Scale. STCI = State-Trait-Cheerfulness Inventory; prevalence of cheerful mood (CH1); low threshold for smiling and laughter (CH2); composed view of adverse life circumstances (CH3); broad range of active elicitors of cheerfulness (CH4); cheerful interaction style (CH5); prevalence of serious states (SE1); perception of even everyday happenings as important (SE2); tendency to plan ahead (SE3); tendency to prefer activities for which concrete, rational reasons can be produced (SE4); preference for a sober, object-oriented communication style (SE5); "humorless" attitude about cheerfulness-related matters (SE6); generally bad mood (BM1); sadness (despondent and distressed mood; BM2); ill-humoredness (sullen and grumpy feelings; BM4); sad (BM3) and ill-humored (BM5) prototypical behavior in cheerfulness evoking situations; MRS-25 = Inventory of Minimal Redundant Scales.

* $p < .05$.

** $p < .01$.

and with $r(235) = .63$ (all $p < .001$) with the list of playfulness statements¹. The latter and the need for play scale were uncorrelated, $r(232) = .05$, *n.s.* Thus, the scales converged well but also addressed different aspects of playfulness. All correlation coefficients (including partial correlations controlling for age) are given in Table 2.

Table 2 shows that the SMAP demonstrated congruent validity with the three measures of playfulness without being redundant. Out of these correlation coefficients, the one with the need for play was the lowest in numerics. At the level of single items of the PRF, those contents relating to hedonism (spending the largest portion of one's time with pleasures) or to sociability (preferring to spend an unhurried evening alone compared to a loud party with friends)

¹ The PRF and the playfulness statements correlated positively ($p < .05$) with all of the APS sub-scales; the correlation coefficients were (PRF/Barnett) .53/.56, .36/.47, .44/.58, .39/.46, and .47/.36 for spontaneous, expressive, fun, creative, and silly-variants of playfulness.

existed independently from playfulness (SMAP). More closely related items (e.g., being absorbed in an unimportant game and playing for hours) yielded comparatively higher correlations; $r(258) = .23$ ($p < .01$) for this item. The SMAP correlated numerically lowest with expressive and creative variants of playfulness (though the correlation coefficients were not significantly different from each other). Controlling for age had only a minor effect on the results.

The playful adult could be described as cheerful, non-serious, and relatively free of bad mood. Greater playfulness correlated with lower inclination to experiencing sadness in cheerfulness-evoking situations or feeling ill-humored in such situations. Cheerfulness and seriousness were robustly related but far from being redundant (r^2 -coefficients were .22 and .16). At the level of STCI-facets, playful adults demonstrated primarily a cheerful interaction style, openness to elicitors of cheerfulness and smiling and laughter as well as a higher prevalence of cheerful mood. Furthermore, they were found not to plan ahead or to set long-term goals, a non-preference for a sober, object-oriented communication style as well as a humorous attitude towards cheerfulness-related behavior, roles, persons, stimuli, situations, and actions. It was striking that the facets that deal with specifics of situations (CH5, SE6, BM3, and BM5) yielded numerically higher correlations. It seemed as if it was easier for the playful adults to experience cheerfulness even in serious or ill-humored cheerful situations.

The playful adult was extraverted, emotionally stable, low on conscientiousness, and demonstrated a higher inclination to culture. Playfulness existed independently from agreeableness. Again, age did not contribute to the expression of any of the personality variables.

In a hierarchical regression analysis, not shown in detail, with adult playfulness as criterion and age (step 1, method *enter*), personality and the temperamental basis of humor as predictors (step 2, *stepwise*), a multiple correlation coefficient of $R^2 = .46$ ($F[5, 217] = 36.36$, $p < .001$) emerged. Cheerfulness was the best predictor ($\Delta R^2 = .24$) of adult playfulness followed by higher expressions of culture ($\Delta R^2 = .09$). Low conscientiousness ($\Delta R^2 = .05$) and low seriousness ($\Delta R^2 = .01$) were also predictive (age: $\Delta R^2 = .07$).

(Dis-)Approval of visual stimuli. Sample 2 was split at the median into groups of high and low scorers in the SMAP and *t*-tests for independent samples were computed for the ratings of liking/disapproval of the two types of workplaces and paintings (see Table 3).

Table 3 shows that the groups of low and high playful people did not differ in their liking or disapproval for organized workplaces and geometric paintings. Those higher in playfulness showed greater liking of the unordered workplace and greater liking of the surrealist artwork and a lower disapproval for both of these stimuli ($p < .10$ for the disapproval of the unorganized workplace). Thus, it seems as if playfulness did not come into play in the organized aspects of work and art but only when dealing with incongruence as represented by the disorganized workplace and the surrealist painting. This comparison, however, is somewhat limited as there were restrictions to the variance in the playfulness sample 2 (students); there were only few low-scorers in this sample (seven had mean scores < 2.00 while 32 were ≥ 3.50).

5. Discussion

This study provides an initial assessment of a short measure of adult playfulness. The SMAP demonstrated high internal consistency ($\geq .80$) and test-retest correlations over 12–16 weeks ($r_{tt} = .74$), and a robust one-dimensional factor solution fit the data best (exploratory and confirmatory analyses). Students scored higher in single items as well as in the total score of the SMAP,

Table 3
Comparison of Ratings for Visual Stimuli in High- vs. Low-scorers in Playfulness (Median-split).

Stimuli	Low playfulness		High playfulness		Mean level comparisons			
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>df</i>	<i>p</i>	<i>d</i>
Unorganized[†]								
Liking	2.67	1.89	3.62	2.54	−2.50	118.85	.007	0.42
Disapproval	6.17	2.82	5.45	2.93	1.47	134	.073	0.25
Organized								
Liking	7.84	1.90	7.64	2.06	0.62	140	.538	–
Disapproval	2.53	1.90	2.67	2.32	−0.40	140	.692	–
Geometric								
Liking	4.41	2.23	4.02	2.61	0.97	138	.372	–
Disapproval	5.45	2.61	5.19	2.67	0.64	137	.552	–
Surrealistic[†]								
Liking	5.64	2.38	6.62	2.33	−2.45	138	.008	0.42
Disapproval	4.55	2.13	3.25	2.24	3.51	138	.000	0.59

Note. *d* = Cohen's *d*.

[†] one-tailed test.

giving rise to the idea of higher playfulness in younger adults (cf. Proyer et al., 2010).

The SMAP converges well with measures for playfulness and the need for play. Thus, convergent validity seems to be given. As in Proyer (2012), the playful adult was described as extraverted, low in conscientiousness but with a higher inclination to culture. The playful adult also seems to be cheerful and exhibits low seriousness. Playfulness as measured by the SMAP, however, does not equal non-seriousness. Overall, the data on the validity presented here converge very well with theoretical expectations.

The validity of the SMAP was also tested by comparing low and high scorers in their approval and disapproval of visual stimuli. Those higher in playfulness expressed higher approval and liking of an unstructured working environment and of an abstract painting compared to those lower in playfulness. There were no differences in ratings for an orderly workplace and for a highly structured painting depicting rectangles of different sizes. One might argue that playful adults work well in both workplaces. It is unclear at the moment whether working in any of these environments would have beneficial or inhibiting effects on them. One hypothesis would be that playful people find more chances of exhibiting playfulness under less structured and less organized conditions. Putatively, they can experience flow more easily under such circumstances (Csikszentmihalyi, 1975), which, in turn, could lead to higher productivity. One might also speculate whether this has a positive impact on their work-satisfaction. Although, this is still only a speculation, it could be tested experimentally. These initial findings on the psychometric properties and validity of the SMAP are encouraging and it seems suitable for a broad range of research purposes.

The SMAP enables one to study adult playfulness in an economical way. It can be easily implemented in larger test-batteries but also for screening purposes that break ground for larger studies or practical applications. For example, research in areas such as better academic performance in playful adults (Proyer, 2011) or relations to divergent thinking (e.g., Lieberman, 1977; Proyer, 2012) can be expanded. Several studies suggested that there are effects of playfulness on different variables of performance at the workplace (e.g., Glynn & Webster, 1992; Yu, Wu, Chen, & Lin, 2007). It is argued that playfulness can also have an impact on a broad range of applications besides basic research in personality. Also, the rise of positive psychology opens new fields of applications such as studying the contributions of playfulness to different aspects of well-being (Proyer, 2012), quality of life (Proyer et al., 2010), or virtuousness (Proyer and Ruch, 2011). Additionally, further research on playfulness as a coping strategy or as a potential

mediator for the relation between leisure activities and life satisfaction seems fruitful. Finally, the relation between experiences of flow and playfulness should be studied in more detail. There are also studies from non-Western countries (Yu et al., 2007), which suggests that playfulness is of relevance across different cultures. However, more cross-cultural research (enabling direct comparisons) is needed. The development of the SMAP accompanies a research program designed to address these and related research questions.

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