



The basic components of adult playfulness and their relation with personality: The hierarchical factor structure of seventeen instruments

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ARTICLE INFO

Article history:

Received 9 February 2013

Received in revised form 24 June 2013

Accepted 2 July 2013

Available online 30 July 2013

Keywords:

Adult playfulness

Hierarchical factor structure

Humor

Playfulness

ABSTRACT

The primary aim of this study was testing the structure of adult playfulness in a joint analysis of seventeen questionnaires and testing the relation of the factors with the big five personality traits. A sample of 244 adults completed the questionnaires and a five factor-solution fit the data best; i.e., (a) Humorousness; (b) Cheerfulness–Uninhibitedness; (c) Expressiveness; (d) Other-directedness; and (e) Intellectuality–Creativity. Correlation analyses (bivariate, canonical) and regression analyses indicated strong overlap of the broader personality factors and the Cheerfulness–Uninhibitedness-factor (extraversion and emotional stability) as well as the Expressiveness-factor (extraversion). The study contributes towards a better understanding of the structure of playfulness in questionnaires developed for adults. Implications for future research are discussed.

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1. Introduction

This study addresses the question of the basic structure of adult playfulness, which 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). Amongst others, playfulness has been linked to life satisfaction (Proyer, 2012c), quality of life (Proyer, Ruch, & Müller, 2010), stress coping (Qian & Yarnal, 2011), or academic achievement (Proyer, 2011). Likewise, positive effects for the work-life were reported (e.g., Glynn & Webster, 1992; Yu, Wu, Chen, & Lin, 2007) as well as its role in mate selection (Chick, Yarnal, & Purrington, 2012).

There is no agreement on what the basic structure of playfulness is. Different approaches have been employed for addressing this. Lieberman (1977) did large-scale observations in kindergartens and schools and identified (a) *manifest joy*; (b) *sense of humor*; and (c) *spontaneity* as basic components. Barnett (2007) used focus groups for identifying (a) *gregarious*; (b) *uninhibited*; (c) *comedic*; and (d) *dynamic-facets*. Proyer (2012a) found seven factors in a psycho-lexical approach; namely, (a) *cheerful-engaged*; (b) *whimsical*; (c) *impulsive*; (d) *intellectual-charming*; (e) *imaginative*; (f) *light-hearted*; and (g) *kind-loving*. There are also other proposed solutions, such as by Glynn and Webster (1992), Guitard, Ferland, and Dutil (2005) or Schaefer and Greenberg (1997)—to name but

a few. These selected examples show that there is convergence (e.g., a humorous, cheerful component) but that there are also differences in the conceptualizations (e.g., differences on whether intellectual components are included or not). The question arises on what the basic components of playfulness in adults are if several measures are subjected to one joint analysis and, thereby, aggregating the expert knowledge of the test authors.

We conducted a literature search using the common databases (most notably Google Scholar, ISI Web of Knowledge, Medline, PsycINFO, PSYINDEX, and Scopus) for retrieving questionnaires for the assessment of playfulness in adults; search criteria were variations of “measurement instrument” (e.g., form, list, scale, or questionnaire) and play/playfulness/adult playfulness. All were developed in English-speaking countries with the exception of one from Switzerland (Proyer, 2012b) and one from Taiwan (Yu et al., 2007). We included instruments for adults only with the exception of Staempfli's (2007) scale for adolescents. The items reflected similar contents as questionnaires used for adults and there were no specific references to younger age; therefore, they seemed generally applicable for adults as well. We considered both, single questionnaires and subscales of larger test batteries and retrieved seventeen instruments in total.

A joint analysis of these questionnaires allows the gathering of expert knowledge from the authors of the instruments and structuring their different theoretical approaches. We used the top-down procedure as described in Goldberg (2006) for testing the inherent hierarchical structure. Additionally, participants completed a questionnaire for the big five personality traits (Ostendorf,

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1990). This allows testing the overlap of the identified factors with a well-established personality system. It was expected that the playfulness factors show some agreement with the broader personality traits but that they will not be redundant. Earlier studies (e.g., Barnett, 2011; Proyer, 2012c) found relations of playfulness with extraversion, openness, emotional stability, and lower conscientiousness. However, there are also differences among facets of playfulness; e.g., emotional stability was stronger related with creative forms of playfulness in comparison with silly-variants (Proyer, 2012c). Therefore, the factors derived from this study were expected to correlate differently with the personality scales. Data were analyzed by computing bivariate correlations between the playfulness and personality dimensions, with regression analyses, and by computing canonical correlations.

2. Method

2.1. Sample

The sample consisted of 244 adults (112 men, 132 women) between 18 and 68 years ($M = 41.0$, $SD = 12.9$). About one quarter (23.8%) was single, 31.6% were in a partnership, 32.4% were married, 10.2% were separated or divorced, and 2% were widowed. About one fifth (19.6%) indicated having a degree from university and about one third (31.1%) indicated having completed a vocational training. A further 18.7% had a school-leaving diploma, which would qualify them for studying at a university.

2.2. Instruments

We used the *Adolescent Playfulness Scale* (Staempfli, 2007; 20 items; $\alpha = .88$ for a total score of all items); *Adult Behaviors Inventory* (Graham, 1987; Casas, 2003; 31; $\alpha = .86$); *Adult Playfulness Questionnaire* (Yu et al., 2007; 29; $\alpha = .87$); *Adult Playfulness Scale* (Glynn & Webster, 1992; 25; $\alpha = .88$); three items of the playfulness scale of the *How do you think* (Davis & Subkoviak, 1975; $\alpha = .62$); the playfulness scale of the *Six Factor Personality Questionnaire* (Goldberg, 1999; 10; $\alpha = .79$); the playfulness scale of the *Leisure Diagnostic Battery* (Ellis, Widmer, & Witt, 2008; 20; $\alpha = .90$); the *Need for play* scale of the *Personality Research Form* (Jackson, 1984; Stumpf, Angleitner, Wieck, Jackson, & Beloch-Till, 1985; 16; $\alpha = .73$); *Older Adult Playfulness Scale* (Yarnal & Qian, 2011; 15; $\alpha = .89$); *Playfulness Questionnaire II* (Betcher, 1977; 28; $\alpha = .75$); *Playfulness Scale for Adults* (Schaefer & Greenberg, 1997; 28; $\alpha = .85$); *Playfulness Scale for Young Adults* (Barnett, 2007) plus the descriptors of playfulness reprinted in the same article (42; $\alpha = .91$); the playfulness scale of the *Sense of Humor Scale* (McGhee, 1996; Proyer et al., 2010; 8; $\alpha = .73$); *Short Measure of Adult Playfulness* (Proyer, 2012b; 5; $\alpha = .87$); *Telic/paratelic state instrument* (O'Connell and Calhoun, 2001; 7; $\alpha = .73$); *Experience of Leisure Scale* (Meakins, Bundy, & Gliner, 2005; Skard & Bundy, 2011; 24; $\alpha = .79$); and the playfulness scale of the *Values-in-Action Inventory of Strengths* (Peterson, Park, & Seligman, 2005; Ruch et al., 2010; 10; $\alpha = .88$). All items had an $\alpha = .97$ and the corrected item-total correlations were between .10 and .71 (median = .41). All items were presented with a five-point answer format (1 = "strongly disagree", 5 = "strongly agree").

The *Inventory of Minimal Redundant Scales* (MRS-25; Ostendorf, 1990) assesses *extraversion* (e.g., impulsive vs. restraint; 5 items each), *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" for each pole). The scale has good psychometric properties and is frequently used in the German language area (e.g., Proyer, 2012c). Alpha-

coefficients were .72 (culture), .75 (agreeableness), .82 (emotional stability), .84 (conscientiousness), and .85 (extraversion).

2.3. Procedure

Two independently working researchers scanned the initial set of 321 items and discussed those potentially redundant. The aim was avoiding asking the same item several times; e.g., 21 items referred to having "a good sense of humor", 10 to laughing or smiling, and 32 were variations of being "imaginative and inventive." These contents accounted for about 20% of all items. We made sure that each scale could be reproduced again. A final set of 160 items remained and was used for this study. If a scale was not yet available in German (8/17), two independently working psychologists translated the items and agreed upon a version in a committee approach. A bilingual person translated the items and the back translation was checked for convergence with the original. This led to minor changes in the formulation of a small number of items. If a questionnaire consisted of adjectives, these were rephrased; e.g., "active vs. passive" (Glynn & Webster, 1992) into "I am an active person". Betcher's (1977) scale was developed for studies with couples and we rephrased the items in a way that persons, who were currently not in a relationship, could also answer them.

Questionnaires were distributed at railway stations, in pedestrian areas, or shopping streets in five cities in the German-speaking part of Switzerland. Participants received an envelope with the questionnaires and a postage free envelope. Upon request, participants received a feedback on the main findings from the study and their individual scores for selected instruments out of the test battery.

3. Results

3.1. The structure of adult playfulness in seventeen instruments

Following Goldberg (2006) we conducted a principal component analysis and after extracting the first unrotated principal component (FUPC), we extracted and rotated further components (to the Varimax-criterion). We saved the factor scores and computed intercorrelations between the extracted components. Factors of adult playfulness were extracted based on their eigenvalues (Scree-test) and according to the interpretation of the solution.

Forty factors exceeded unity; the eigenvalues of the first ten factors were 32.55, 10.05, 6.19, 5.33, 4.82, 3.60, 3.24, 3.07, 2.58, and 2.50. The Scree test would allow for a three- or five-factor solution and a parallel analysis (Horn, 1965) suggested the extraction of eight factors. Solutions for two to eight factors were computed. When evaluating the solutions, a five-factor solution (36.83% explained variance) could be best interpreted. Starting from solutions with six factors, the interpretation of the findings was difficult because of high secondary loadings and because some factors consisted only of a small number of items. The trend of eigenvalues suggested a very potent first factor (20.34% explained variance), which represented a general playfulness-factor. Fig. 1 shows the hierarchical structure and emergence of the factors.

Fig. 1 shows that after the general factor of playfulness was split into two factors, one factor remained stable to the final level; it was labeled *Humorousness*. Table 1 gives an overview on item contents with the highest loadings on the respective factors. Items on this factor centered on having a good sense of humor or being perceived as humorous by others; liking to joke and displaying other humorous behaviors. Emerging from the second factor (2/2) was Factor II, which remained stable to the fifth level. Items reflected

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