Playfulness in Adults Revisited
The Signal Theory in German Speakers

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The authors elaborate on the role of playfulness as a preferred characteristic in potential long-term partners recently espoused by Garry Chick and others. They aim to replicate the findings of such research by studying a different culture (that of German-speaking countries) and to develop them further by taking into account the participants' relationship status and individual differences in their playfulness. A sample of 327 students completed a rating scale for desired characteristics in potential partners and a questionnaire for playfulness as a personality trait. Their findings do indeed lend support to the notion that being playful is a desirable trait of potential long-term mates. **Keywords**: Adult play; play and romantic relationships; play and sexual selection; playfulness; Preferences Concerning Potential Mates rating scale; Sexual Strategies Theory

Playfulness—despite the lack of a general consensus on its conceptualization, definition, and measurement—as a personality trait in adults has been associated with a broad range of positive outcomes, such as academic success (Proyer 2011), coping with stress (e.g., Barnett 2011; Staempfli 2007), innovative work performance (e.g., Glynn and Webster 1992), and subjective well-being (e.g., Barnett 2012; Proyer 2012c, 2013, 2014b) to name but a few. Although playfulness is a comparatively understudied topic, researchers have used diverse techniques for a better understanding of its content and structure. Some investigators (e.g., Guitard, Ferland, and Dutil 2005) use qualitative techniques, others (e.g., Lieberman 1977) observe behavior, still others (e.g., Barnett 2007; Yarnal and Qian 2011) employ focus groups, and some (Proyer 2012b, 2014a) take psycho-linguistic approaches. Overall, their findings encourage a stronger consideration of playfulness in research and practice because it seems to be a trait of great potential in numerous areas.

We often hear as a general criticism about the research on playfulness that it rarely replicates its findings and frequently fails to provide information on the

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stability of its findings and their general applicability. In an effort to overcome these shortcomings, we aimed both to replicate and to expand a recently published study (Chick, Yarnal, and Purrington 2012) on the signal function of adult playfulness, a study which has greatly contributed to an increased appreciation of the important role of playfulness in mate selection in adults. We hoped to replicate the study using German-speaking participants and thus contribute to a cross-cultural evaluation of its findings. We extended the study by considering moderating variables such as individual differences in playfulness and a participant's relationship status.

Testing the Signal Theory of Adult Playfulness

Chick suggested that play in adults might be a consequence of sexual selection and thus serve a signal function in mate selection. This theory and its background received a full review in Chick (2001, 2013a) and Chick, Yarnal, and Purrington (2012), so in this article, we need only summarize the main ideas of the hypothesis. According to Chick (2001), adult playfulness can be considered one consequence—among others—of sexual selection. Sexual selection means that while some traits may not be adaptive for survival, they still can contribute to reproductive success. The two main mechanisms in sexual selection are competition and choice, both of them relevant for males and females. Chick argues that play and playfulness serve as signals for desired qualities in potential mates, serving an important function in mating choice and, thus, contributing to the reproductive success. More concretely, he hypothesizes that playfulness in men signals nonaggressiveness to females and that males see playfulness in women as a sign of youthfulness and, thus, fecundity.

Chick, Yarnal, and Purrington (2012)—hereafter shortened to Chick et al.—tested hypotheses derived from this theory empirically (i.e., testing whether playfulness truly is a highly valued trait in potential long-term partners). Earlier research on mating preferences focused on the list of thirteen desired characteristics in potential mates developed by Buss and Barnes (1986), which was also used (with an extension) by Chick et al. (2012). The list by Buss and Barnes has been used in numerous studies and has proven its usefulness (e.g., Buss 1989; Buss et al. 1990; Buss and Angleitner 1989; Koyama, McGain, and Hill 2004). Buss and Barnes derived the original entries both by theoretical deliberations and factor analyses and by allowing for a broad and economic assessment of

preferences in potential partners. Numerous studies using the Buss and Barnes list found that the attributes *kind and understanding* and *intelligent* consistently rank very high for both men and women.

Gender differences in the preference ratings typically fall in line with predictions derived from evolutionary-based theories such as the one found in Buss and Schmitt's Sexual Strategies Theory (1993). From this perspective, the different preferences of men and women seem a consequence of the different levels of minimal parental investment in each sex. These are assumed to result in women, on average, being more concerned with a potential mate's loyalty and ability to provide resources in their mating strategies. Men are expected to be, on average, more concerned with a potential mate's fertility and thus value youthfulness (e.g., Symons 1979).

As mentioned, Chick et al. (2012) used the original list by Buss and Barnes (1986), and added to it three additional characteristics—*playful*, *fun loving*, and *sense of humor*. Undergraduate students ($N = 254$) were asked to rate this list of sixteen positive qualities with respect to how desirable they see these in potential long-term partners. Overall, they rated *sense of humor* as the (numerically) most desirable quality in potential partners, *fun loving,* the third, and *playful,* the fifth—although females alone ranked *playful* fourth (the full rank order appears in figure 1). Thus, all three traits added to the initial list ranked in the upper half of all sixteen characteristics, with *playful* being among the top five characteristics.

Chick et al. found no gender differences for ratings of *playful*. However, men rated *physically attractive*, *healthy,* and *good heredity* as more desirable in potential long-term partners than women did. Women rated *kind and understanding* as more desirable. These findings reflect the results of earlier studies conducted in the United States and Germany (cf. Buss et al. 1990; Buss and Angleitner 1989).

Overall, the study by Chick et al. suggests that both males and females consider playfulness a highly desirable trait in potential partners, as they also consider desirable those who are fun loving and who have a sense of humor. Males and females differed in their ratings of the traits they found most desirable in potential long-term partners on a characteristic related to nonaggressiveness—females rated *kind and understanding* higher than males did. Males rated *physically attractive*, *healthy*, and *good heredity* (three traits potentially related to fecundity) as more desirable than females rated them. These results are in line with Chick's (2001) hypothesis that adult playfulness serves as a signal of positively valued qualities (nonaggressiveness, fecundity) to potential long-

term mates and thus may have resulted from sexual selection. This study lends strong support to the notion that playfulness is an important characteristic in potential partners.

We should also mention that Chick et al.'s findings have recently received support from a study using 174 adolescents. In a different approach, Weber and Ruch (2012) used a taxonomy of twenty-four character strengths—morally valued traits found in the Values-in-Action (VIA) classification of strengths and virtues of Peterson and Seligman (2004)—to study which of these strengths adolescents rate as important in romantic relationships. One of the strengths of the VIA classification is *humor-playfulness*. Peterson and Seligman use the terms synonymously and define it as "liking to laugh and joke; bringing smiles to other people." Although there is much literature on the close relation between humor and playfulness (e.g., Guitard, Ferland, and Dutil 2005; Lieberman 1977; Mannell and MacMahon 1982; McGhee 1979, 2010), we should mention that the synonymous use of humor and playfulness has been criticized (Proyer 2014a; Proyer and Jehle 2013; Proyer and Ruch 2011) and that humor and playfulness should best be viewed as overlapping but not redundant. This discussion, however, falls beyond the scope of this article. Most importantly, the participants in Weber and Ruch's (2012) study had to nominate the five strengths they would most like in an ideal partner. Both boys (77.5 percent) and girls (76.5 percent) rated the strength of *humor-playfulness* only below honesty. They ranked the strengths of *love, kindness*, and *hope* third to fifth. Although Peterson and Seligman's definition of *humor-playfulness* does not measure playfulness in its narrow sense (Proyer and Ruch 2011), it indicates that playfulness as used within the framework of the VIA classification seems relevant to mate selection as early as adolescence.

The findings of Chick et al. on the importance of playfulness with respect to mating preferences may also be tied to specific functions that adults perceive in playfulness in their daily lives (i.e., their implicit representations of playfulness). Recently, Proyer (2014c) conducted an online survey of 324 adults and asked them to list the functions, as they perceived them, of play in different settings (e.g., at work or with one's partner). They perceived the functions of playfulness in a partnership broadly to be, first, to increase well-being through humor, cheerfulness, and laughter; second, to maintain excitement and convey affection; and, third, to cultivate the relationship and to diffuse tension. The fact that adults assign functions such as these to play helps explain why humans desire playfulness in potential partners.

One key to the role of play in romantic relationships may also be that it

facilitates positive emotions (cf. Aune and Wong 2002; Fredrickson 2001; Panksepp 1993). Fredrickson argues that the experience of positive emotions (e.g., joy, interest, contentment, and love) broadens people's thinking and increases their repertoire of activities. Negative emotional states usually occur in potentially threatening situations (e.g., when coming under attack), and in such situations, it is usually beneficial to have only limited options for action—like fighting or running away (Frijda 1986). Positive emotions, however, occur in nonthreatening situations when one finds beneficial the option to select from many different kinds of activity. Fredrickson (2001) further argues that these positive emotions not only broaden the range for action and thought but also afford a building component. This means that positive emotions not only make an individual more resilient in the future, but they also increase the likelihood an individual will experience more positive emotions in the future—a "positive upward spiral."

Most importantly, this theory has a direct reference to play. Fredrickson (2003) suggests that playing and being playful can facilitate the emergence of positive emotions. She notes that

> Joy and playfulness build a variety of resources. Consider children at play in the schoolyard or adults enjoying a game of basketball in the gym. Although their immediate motivations may be simply hedonistic—to enjoy the moment—they are at the same time building physical, intellectual, psychological and social resources. The physical activity leads to long-term improvements in health, the game-playing strategies develop problem-solving skills, and the camaraderie strengthens social bonds that may provide crucial support at some time in the future. . . . Similar links between playfulness and later gains in physical, social, and intellectual resources are also evident in nonhuman animals, such as monkeys, rats, and squirrels (333).

Further, she argues: "Joy, for example, encourages playful behavior. These broadened thought-action repertoires, in turn, build intellectual, physical, social, and psychological resources for the future. Such resources translate into greater odds of survival and reproductive success" (333). Hence, positive emotions and their relationship with play and playfulness may also be relevant to the reasons people see playfulness as an important characteristic in potential partners.

From a more pragmatic point of view, we might argue that a playful partner increases the likelihood of experiencing positive emotions and that this, in

turn, facilitates well-being. There is also a considerable amount of literature that supports the notion that play and playfulness serve other important functions in romantic relationships or that they are associated with specific preferences for attachment and closeness (e.g., Aune and Wong 2002; Baxter 1992; Johnson 2003; Metz and Lutz 1990; Mount 2005; Proyer, 2014c, 2014d; Vanderbleek et al. 2011; Woll 1989).

In our investigation, we aimed to replicate the study done by Chick et al. in a different cultural context to investigate the cross-cultural relevance of their findings. In other words, we wished to test whether their findings can be extrapolated to German-speaking countries. To accomplish this, we collected data using an identical list of characteristics and identical instructions for participants in Austria, Germany, and Switzerland. Buss and Angleitner (1989) replicated Buss and Barnes's (1986) seminal study and compared a German sample with a sample from the United States. Although they found high levels of convergence (using Spearman's rho-coefficient; $\rho = .91$ in Study 1 and $\rho = .84$–$.96$ in Study 2) they also observed differences. For example, American participants ranked *physical attractiveness* (Studies 1 and 2) and *college graduate* (Study 1) as more desirable than did their German counterparts. Both female and male German participants ranked the qualities of *good housekeeper* (Studies 1 and 2) and *easygoing* (Study 2) higher than the American participants did. Done in 1989, this study, however, used only the initial thirteen-item list, and we do not have data for comparison with the additional items that Chick et al. introduced later.

In our current study, we expected the rankings to be similar to those of the U.S. study and *playfulness*, again, to fall in the upper half. We expected a similar convergence between data from the United States and the German-speaking countries as reported by Buss and Angleitner (1989; i.e., coefficients around $\rho = .90$ when comparing the rankings obtained in our study to the rankings reported by Chick and his colleagues). We also compared our rankings to the rankings for the identical variables reported by Buss and Angleitner to see whether there any changes have taken place since. One might argue that cultural and social changes could have had an impact on the relative importance of these characteristics. Nevertheless, despite these changes, we expected a similar ranking of the characteristics (i.e., again, coefficients around $\rho = .90$ for the comparison between the German-speaking samples).

Our aim was to broaden the study done by Chick and his associates in two important aspects. First, we considered individual differences in playfulness. In general, we reasoned that there would be a variation in the preferences for char-

acteristics of long-term mates depending on the level of self-reported playfulness. Participants completed a questionnaire for playfulness (Proyer 2012a). The *Short Measure of Adult Playfulness* (SMAP) assesses playfulness in the sense of an easy onset and a high intensity of playful experiences along with the frequent display of playful activities. We were interested in testing whether those who rank high in playfulness differ in their preferences regarding potential long-term mates in comparison to those who rank low in the playfulness trait. In the mating, we expected playful individuals to prefer companions who are also playful more often than do those who are not playful. Therefore, we expected mean-level differences in the ratings of two groups of participants, those high in playfulness and those low in playfulness. Given the relationships between playfulness and humor (e.g., McGhee 1979) and the experience of pleasure (having fun) and creativity (e.g., Glynn and Webster 1992), we also expected higher ratings of the three characteristics *sense of humor*, *fun loving* and *creative* by participants high in playfulness when compared with participants low in playfulness. Also, Chick (2001) argues that aspects of playfulness might play a role for ratings of *exciting personality* and *intelligent* within the thirteen-item list by Buss and Barnes (1986), because these traits might also overlap with playfulness. Hence, we expected that the ratings of these two characteristics would also be higher for playful than for nonplayful participants. Nevertheless, we expected the overall rankings to be similar.

Our second extension of the Chick study considers the relationship status of the participants in the analyses. Chick and his colleagues did not differentiate between people who were in a relationship and those who were not currently in a relationship. This makes sense from the perspective of an evolutionary approach that would indicate a similar perception of the proposed signals of adult playfulness in all participants. However, one might argue that individual differences exist in the ability to read the signals associated with playfulness. Also, some personality traits may interact with this perception, as well as with the decoding and encoding of such signals as openness to new experiences, or repression versus sensitization (Byrne 1961). We argue that, potentially, those who are currently in a relationship may be even more suitable for testing the proposed hypotheses because they have already found a partner successfully. This, of course, does not mean that those who are not currently in a relationship are less prone to such signals or cannot decode them. In a more exploratory approach, then, we wanted to compare findings (i.e., test rankings and mean-level differences) for groups of participants who are in a relationship with those who are not currently in a relationship.

This analysis allowed us to address two main research questions. First, we expected that those in relationships exceed those who are single in their self-reported playfulness. We might argue that this is an indirect, but also independent test of the signal theory of playfulness in the sense that those who are more playful should more likely find partners than those who are less playful. Greater playfulness should correlate with stronger expressions of the signals being considered—making the playful person potentially more attractive to potential partners.

The second research question deals with differences in the rank order and also with mean-level differences in the ratings of the sixteen characteristics proposed by Chick and others. We expected that those in the group currently in a relationship would rate playfulness as more important than those who were single. Additionally, we expected mean-level differences between the two groups, that is, not only differences in the rank order, but also in the level of playfulness itself. Since we do not consider those who are not currently in a relationship to be incapable of initiating and maintaining a relationship, we expect low effect sizes for all of the comparisons.

Aims of the Study

Overall, we wanted to test whether findings reported by Chick et al. (2012) can be replicated with German-speaking participants from Austria, Germany, and Switzerland. Furthermore, we were interested in testing the role of two moderators: individual differences in playfulness as personality trait and in relationship status.

Method

Sample

The sample consisted of 327 students (79 men, 248 women). Of these, 266 were undergraduates, and 61 were postgraduate students. Their ages ranged from 18 to 44 years ($M = 22.5$, $SD = 3.1$); 94 percent of them were 27 years old or younger. Sixty-two percent were single, and 38 percent were in a relationship (of the latter, 3 percent were married). Most participants were German (75 percent); 14 percent were Swiss; and 12 percent were Austrian.

Instruments

The Preferences Concerning Potential Mates rating scale (Buss and Barnes 1986), as modified by Chick et al., assesses information on desired characteristics of potential long-term partners. Each of the sixteen characteristics (*playful, sense of humor, fun loving, kind and understanding, exciting personality, intelligent, physically attractive, healthy, easygoing, creative, wants children, college graduate, good earning capacity, good heredity, good housekeeper, and religious*) is rated on a 10-point scale (1 = *not at all desirable in a potential long-term partner*, 6 = *moderately desirable in a potential long-term partner*, and 10 = *extremely desirable in a potential long-term partner*).

The Short Measure of Adult Playfulness (SMAP; Proyer 2012a) consists of five items to assess adult playfulness (e.g., *I am a playful person*). Greater scores in the SMAP indicate the frequent display of playful activities, as well as an easy onset and a high intensity of playful experiences. Answers are given on a 7-point scale (1 = *strongly disagree* to 7 = *strongly agree*). Proyer finds the best fit to be a one-dimensional solution in exploratory and confirmatory factor analyses. The reliability was high; alpha-coefficients across three samples lay between .80 and .89 and the test-retest correlation was .74 (twelve to fifteen weeks between tests). Convergent validity of the measure has been established by showing correlates in the expected direction with three different playfulness measures (Barnett 2007; Glynn and Webster 1992; Jackson 1984). Correlates of measures for the temperamental basis of the sense of humor (Ruch, Köhler, and van Thriel 1996) as well as its associations with the Big Five personality traits fell in the expected direction. Previous research supports the overall validity of the measure (see Proyer 2012a, 2013; Proyer and Rodden 2013; Proyer and Ruch 2011). The internal consistency (Cronbach's alpha) in the present study was .86.

Procedure

A bilingual (English and German) psychologist translated the characteristics used by Chick and his associates. Three researchers fluent in English evaluated the translation. For our study, we presented the characteristics in alphabetical order. We recruited participants via university mailing lists and social network sites and asked them to take part in an online survey hosted by the authors' institution. Subjects participated voluntarily and received written feedback on their individual scores as an incentive to participate. This was part of a larger survey advertised as a study on personality and playfulness. Participants first completed questions on demographic variables (age, gender, nationality, and

relationship status), followed by the SMAP. Finally, they rated their preferences for characteristics of potential long-term partners.

Overall, 389 participants started the survey, but 62 did not finish it (drop-out rate = 16 percent). Individuals who completed all questionnaires ($n = 327$) did not differ from the dropouts, in terms of playfulness (as measured by the SMAP; $t(387) = -1.19$, $p = .23$) or in demographic variables such as age ($t(387) = -1.19$, $p = .23$) or gender, $\chi^2(2) = 2.77$, $p = .10$.

Results

Preliminary Analyses

Participants from the three German-speaking countries (Germany, Switzerland, and Austria) differed neither in their playfulness (SMAP; $F(2, 324) = 0.87$, $p = .42$) nor in their preference ratings for potential partners in long-term relationships; the respective *F*-scores ranged between $F(2, 324) = 0.15$ and $F(2, 323) = 2.26$ (all were *n.s.*). Therefore, all subsequently conducted analyses were based on the full sample of German-speaking students.

Mean scores and standard deviations for the SMAP were comparable to those reported in earlier studies. The SMAP scores did not relate to age ($r(325) = -.01$, $p = .89$), and men and women did not differ in their playfulness, $t(325) = .14$, $p = .89$. Also, men and women in the sample did not differ in their age ($t(325) = 1.59$, $p = .11$), and preference ratings existed mostly independent of age. The only exception was the preference rating of *good housekeeper*, which tended to decrease in its importance with age, $r(324) = -.11$, $p = .049$. The correlation coefficient, however, seems practically negligible indicating 1 percent overlapping variance only between the two variables.

Replication of the Chick et al. Study with a German-Speaking Sample

RANKING THE DESIRED CHARACTERISTICS. We computed mean scores and rank order for the preference ratings for men and women separately. This enabled us to compare our results with earlier studies (i.e., thirteen items in Buss and Barnes 1986) and with earlier data for a German-speaking sample (Buss and Angleitner 1989). All coefficients are given in figure 1.

Figure 1 shows that *kind and understanding* ranked as the most preferred characteristic for both men and women in our sample, followed by: *intelligent*;

	Chick et al. (2012)			Buss & Barnes (1986)			Buss & Angleitner (1989)				Proyer & Wagner		
							German sample		American sample				
	Both	F	M	Both	F	M	F	M	F	M	Both	F	M
Playful	5	4	5								8	8	9
Sense of humor	1	2	1								3	3	5
Fun loving	3	3	3								4	4	3
Kind and understanding	2	1	2	1	1	1	1	2.5	1	1	1	1	1
Exciting personality	7	5	7	2	2	2	3	2.5	3	3	5	5	4
Intelligent	6	6	6	3	3	3	2	1	2	2	2	2	2
Physically attractive	10	11	9	4	6	4	8	5	6	4	6	7	6
Healthy	4	8	4	5	5	5	5	6	5	5	7	6	7
Easygoing	8	7	8	6	4	6	4	4	4	6	9	9	10
Creative	15	15	15	7	7	8	6	7	7	7	11	11	8
Wants children	9	9	10	8	10	7	7	8	10	8	10	10	11
College graduate	11	10	11	9	8	9	11	10	8	9	12	12	12
Good earning capacity	14	13	14	10	9	11	9	11	9	11	15	14	15
Good heredity	12	14	12	11	11	10	13	13	12	10	14	15	13
Good housekeeper	13	12	13	12	12	12	10	9	13	13	13	13	14
Religious	16	16	16	13	13	13	12	12	12	12	16	16	16

Note. Sample characteristics: Chick et al. (2012): 254 students, mean age = 20.3 years, 164 m, 89 f. Buss & Angleitner (1989, Study 1); German sample: 343 students, mean age = 24.4 (men) and 25.3 (women) years, 174 m. 169 f; American sample: 313 students, mean age = 22.2 (men) and 24.0 (women) years, 106 m, 207 f. Buss & Barnes (1986, Study 2): 100 students, age range: 18 to 23 years, 50 m, 50 f.

Figure 1. Rank order of traits in studies by Chick, Yarnal, and Purrington (2012), Buss and Barnes (1986), Buss and Angleitner (1989), and Proyer and Wagner

sense of humor (ranked fifth by men); *fun loving* (ranked third by men); and *exciting personality* (ranked fourth by men). *Playful* ranked eighth in the overall sample, which is the ranking female participants gave it, although male participants ranked it ninth. This ranking supports the notion that playfulness is an important factor—as well as the related traits labeled *sense of humor* and *fun loving*—when considering desired characteristics in potential long-term mates. All three ranked in the upper half of the sixteen traits and show that the findings obtained from a U.S. sample can be closely replicated by data collected in German-speaking countries.

An inspection of the rank order for the ratings can be seen as a first step in the analysis. However, one problem we found with this type of analysis is that mean scores within a narrow range can differ numerically but not differ statistically or in any practically meaningful way. This means that our interpretation of the absolute difference among the mean scores does not consider potential measurement errors. This is illustrated in figure 2, which depicts the mean scores but also claims a 95 percent confidence interval for all ratings (this is the interval that covers the true score for the respective rating with a security of 95 percent). While the mean score is the best approximation for the true score, the score may lie somewhere in these intervals. Thus, characteristics whose confidence intervals overlap should not be considered distinct from each other.

Figure 2 shows that the sixteen ratings could be classified into six broader groups of characteristics. Group I represented the characteristics that were rated as most desirable in potential long-term mates: *Kind and understanding*, *intelligent*, *sense of humor*, and *fun loving.* There were only marginal numeric differences in ratings for these characteristics, which means that their respective confidence intervals overlap. Group II's *exciting personality* was rated as less desirable than the first four traits but as more desirable than those following it, and, thus, it was treated as a category. Group III consisted of the traits *physically attractive*, *healthy*, *playful*, *easygoing*, *wants children,* and *creative*. Group IV's ratings for *college graduate* were lower than for all the traits in group III but higher than for those in group V, which consisted of *good housekeeper*, *good heredity*, and *good earning capacity*. These traits received ratings around or below the midpoint of the scale. Group VI's *religious* was rated the least desirable characteristic in potential long-term mates. We think it is best to base the preference ratings on these six larger groups. Thus, *playful* ranked in the upper half of the ratings.

Figure 3 shows the descriptive statistics—means, standard deviations

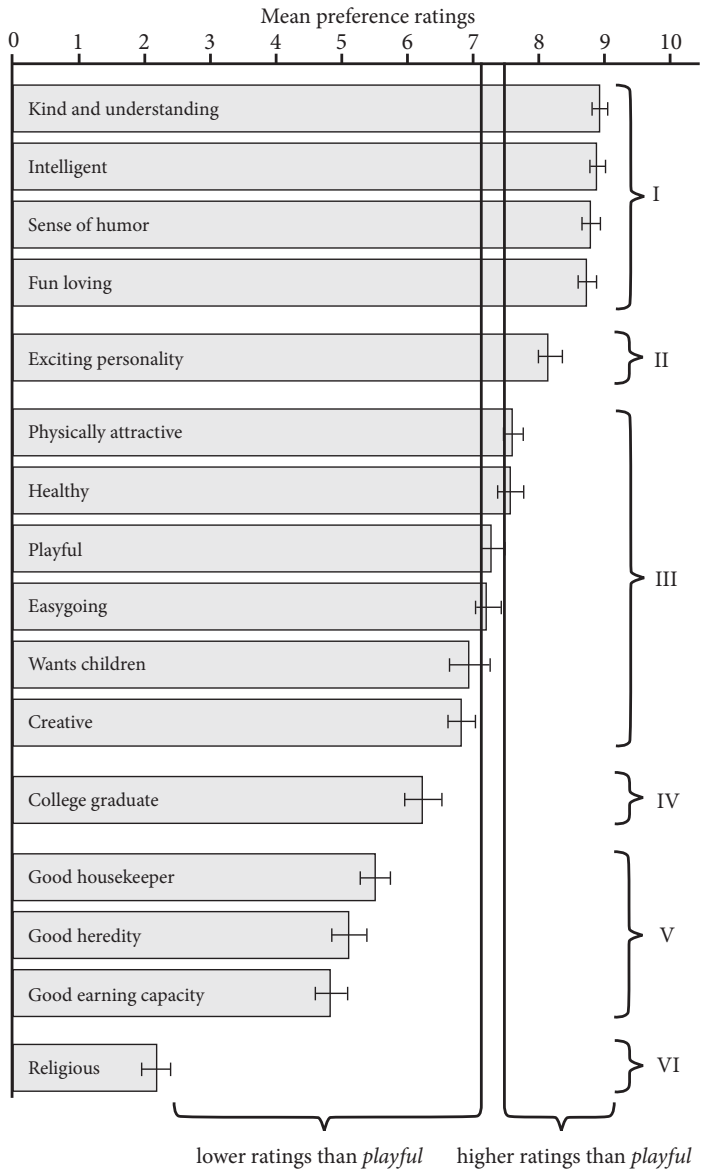

Figure 2. Mean preference ratings for the 16 characteristics. Error bars show the 95 percent confidence intervals.

	Combined ratings (*n*=323 – 327)			Female ratings (*n*=245 – 248)				Male ratings (*n*=77 – 79)			Gender differences	
	Min[1]	*M*	*SD*	95% CI	Min[1]	*M*	*SD*	Min[1]	*M*	*SD*	*t*	*d*
Playful	1	7.31	1.66	7.12 - 7.49	1	7.39	1.59	1	7.05	1.86	-1.57	
Sense of humor	4	8.80	1.22	8.67 - 8.93	4	8.90	1.18	4	8.48	1.30	-2.71*	0.35
Fun loving	3	8.75	1.31	8.61 - 8.90	3	8.81	1.29	3	8.56	1.36	-1.49	
Kind and understanding	5	8.97	1.04	8.85 - 9.08	6	9.01	1.03	5	8.82	1.05	-1.42	
Exciting personality	3	8.16	1.51	7.99 - 8.32	4	8.03	1.45	3	8.54	1.64	2.65*	0.34
Intelligent	5	8.90	1.05	8.79 - 9.02	6	8.97	1.02	5	8.69	1.12	-2.06*	0.27
Physically attractive	3	7.62	1.25	7.49 - 7.76	3	7.41	1.22	6	8.29	1.08	5.72**	0.74
Healthy	1	7.57	1.89	7.36 - 7.78	1	7.69	1.87	2	7.76	1.98	0.99	
Easygoing	1	7.21	1.81	7.01 - 7.41	1	7.27	1.76	1	7.04	1.98	-0.96	
Creative	1	6.83	1.98	6.61 - 7.05	1	6.73	1.98	2	7.14	1.96	1.60	
Wants children	1	6.93	2.82	6.63 - 7.24	1	6.96	2.87	1	6.86	2.70	-0.26	
College graduate	1	6.25	2.46	5.98 - 6.51	1	6.28	2.47	1	6.14	2.43	-0.44	
Good earning capacity	1	4.83	2.24	4.58 - 5.07	1	5.11	2.19	1	3.95	2.19	-4.01**	0.52
Good heredity	1	5.08	2.44	4.81 - 5.34	1	5.08	2.33	1	5.05	2.77	-0.11	
Good housekeeper	1	5.53	2.12	5.30 - 5.76	1	5.72	2.04	1	4.95	2.28	-2.82*	0.36
Religious	1	2.24	1.99	2.02 - 2.46	1	2.26	2.07	1	2.16	1.73	-0.38	

Note. [1]All characteristics received a maximum rating of 10, with the exception of male ratings of "good earning capacity" (Max = 9) and of "religious" (Max = 8) and female rating of "good housekeeper" (Max = 9). Scale: 1 = not at all desirable, 10 = extremely desirable. * $p < .05$ ** $p < .001$

Figure 3. Descriptive statistics for female/male ratings of preferred partner characteristics and combined ratings for both genders

	Proyer & Wagner		Chick et al. (2012)		Buss & Angleitner (1989) German sample[1]	
Present study	M	Both	F	M	F	M
Both		.88*				
Females	.96*		.88*		.92*	
Males				.80*		.94*

Note. [1] 13 common items. * $p < .001$

Figure 4. Correlations (Spearman's rho) between ranks of common items in three studies

and minima—of the desirability ratings in the total sample and split for men and women. For gender differences, we conducted mean-level comparisons. To help protect against inflating the Type I-error rate in the follow-up *t*-tests, we conducted a one-way multivariate analysis of variance (MANOVA). Using Pillai's trace, we found a significant effect of gender on the partner preference ratings, $V = 0.26$, $F(16, 295) = 6.47$, $p < .001$, $\eta^2_p = 0.26$. This finding supports the notion that there are differences in the ratings. We further explored the difference by means of *t*-tests for independent samples. In case of significant mean-level differences, we also computed the effect size for the difference (Cohen's *d*).

Figure 3 shows that women rated *good earning capacity*, *good housekeeper*, *sense of humor*, and *intelligent* (ranking according to effect sizes from largest to smallest) as more desirable in potential long-term partners than men did. Men rated *physically attractive* and *exciting personality* as more desirable characteristics than women. Men and women did not differ in their ratings for *playful*.

Testing the convergence of the ratings across different samples. We computed rank correlation coefficients (Spearman's rho) to test the similarity among the different samples—we compared our findings to those presented in Buss and Angleitner (1989) to test for the convergence with earlier data from a German-speaking sample and to those presented in Chick et al. (2012) to test the convergence with current U.S. data. The correlation coefficients are given in figure 4.

Figure 4 shows that data of men and women in this study converged very well and were almost identical. When comparing our results to the rank order (for the thirteen identical items) in Buss and Angleitner's German sample from 1989, the rank correlation coefficients of $\rho = .92$ for women and of $\rho = .94$ for men indicated good convergence in the expected range. The correlation coefficients between the rank order in Chick et al. and in the present sample was $\rho = .88$ for the overall sample $\rho = .88$ for women and $\rho = .80$ for men), indicating an overall similarity but also differences in the rank orders (see figure 1 for details). In terms of the size of the coefficients the convergence of the rank order with the (older) German sample was numerically higher than with the U.S. sample. However, we acknowledge that the latter comparison included three additional ratings.

The Role of Individual Differences in Playfulness

To test the hypothesis that participants with higher scores in trait of playfulness would rate *playful* and related traits (*sense of humor*, *fun loving*, *creative*, *easygoing*) as more desirable than their less playful counterparts, we split the sample into two groups of high and low scorers in the SMAP (Proyer 2012a; median split). Before conducting the *t*-test on mean-level differences, we computed a one-way MANOVA. Using Pillai's trace, we found a significant effect of low vs. high playfulness on the partner preference ratings, $V = 0.26$, $F(16, 295) = 6.45$, $p < .001$, $\eta^2_p = 0.26$. Figure 5 shows mean scores (including mean level comparisons; *t*-tests for independent samples), standard deviations and minima of the ratings split for these two groups, as well as the rank order of the characteristics in each of the groups.

Figure 5 shows that those more playful outscored those less playful with regard to ratings for *playful*, *sense of humor*, *fun loving*, *easygoing*, *creative*, *exciting personality*, *intelligent*, and *wants children* (rank ordered according to effect sizes from largest to smallest). Despite these differences, the rank order for the characteristics for the individuals low and high in playfulness converged well ($\rho = .93$), which may suggest that the difference more likely shows the intensity of their playfulness than the relative importance of a single characteristic. Nevertheless, there was a contribution of individual levels of playfulness (in the sense of specific preferences).

The Role of the Relationship Status of Participants

To extend the findings in the study done by Chick and his associates, we were also interested in testing whether differences in the relationship status (being

	Low playfulness (n= 160 – 163)					High playfulness (n=163 – 164)					Group differences	
	Min[1]	*M*	*SD*	95% CI	*Rank*	Min[1]	*M*	*SD*	95% CI	*Rank*	*t*	*d*
Playful	1	6.58	1.71	6.32 - 6.85	10	4	8.02	1.26	7.83 - 8.22	6	-8.68**	0.96
Sense of humor	4	8.45	1.32	8.24 - 8.65	3	4	9.15	0.99	9.00 - 9.31	1	-5.45**	0.60
Fun loving	3	8.39	1.53	8.15 - 8.63	4	6	9.10	0.93	8.96 - 9.25	2	-5.05**	0.56
Kind and understanding	6	8.94	1.00	8.78 - 9.09	1	5	8.99	1.07	8.83 - 9.16	4	-0.48	
Exciting personality	4	7.82	1.57	7.58 - 8.07	5	3	8.49	1.37	8.28 - 8.70	5	-4.09**	0.45
Intelligent	6	8.77	1.12	8.60 - 8.95	2	5	9.04	0.95	8.89 - 9.18	3	-2.29*	0.25
Physically attractive	3	7.63	1.26	7.43 - 7.82	6	3	7.62	1.23	7.43 - 7.81	8	0.03	
Healthy	2	7.52	1.89	7.23 - 7.81	7	1	7.62	1.90	7.33 - 7.91	9	-0.47	
Easygoing	1	6.71	1.97	6.41 - 7.02	8	3	7.70	1.50	7.47 - 7.93	7	-5.08**	0.57
Creative	1	6.38	2.00	6.07 - 6.67	11	2	7.28	1.86	6.99 - 7.56	10	-4.17**	0.46
Wants children	1	6.61	2.92	6.16 - 7.06	9	1	7.25	2.70	6.83 - 7.67	11	-2.05*	0.23
College graduate	1	6.28	2.56	5.88 - 6.67	12	1	6.21	2.35	5.85 - 6.58	12	0.23	
Good earning capacity	1	4.96	2.22	4.62 - 5.31	14	1	4.70	2.26	4.35 - 5.04	15	1.08	
Good heredity	1	4.96	2.50	4.57 - 5.34	15	1	5.20	2.37	4.83 - 5.56	14	-0.88	
Good housekeeper	1	5.65	2.14	5.32 - 5.98	13	1	5.41	2.10	5.09 - 5.74	13	1.02	
Religious	1	2.17	1.96	1.86 - 2.47	16	1	2.31	2.02	2.00 - 2.62	16	-0.66	

Note. [1]All characteristics received a maximum rating of 10. Scale: 1 = not at all desirable, 10 = extremely desirable. Low playfulness group: 39 m, 124 f; high playfulness group: 40 m, 124 f.
* $p < .05$ ** $p < .001$

Figure 5. Descriptive statistics and mean-level comparisons for ratings by participants low vs. high in playfulness (median split in the SMAP).

	Single (n= 197 – 198)					In a relationship/married (n=121 – 123)					MLC	
	Min[1]	*M*	*SD*	95% CI	*Rank*	Min[1]	*M*	*SD*	95% CI	*Rank*	*t*	*d*
Playful	1	7.08	1.77	6.83 - 7.32	9	4	7.68	1.43	7.43 - 7.94	6	-3.21**	0.36
Sense of humor	4	8.71	1.29	8.53 - 8.89	3	4	8.98	1.08	8.78 - 9.17	2	-2.00*	0.23
Fun loving	3	8.64	1.42	8.44 - 8.84	4	4	8.95	1.13	8.75 - 9.15	3	-2.19*	0.25
Kind and understanding	5	8.80	1.10	8.65 - 8.96	2	7	9.21	0.89	9.05 - 9.37	1	-3.47**	0.40
Exciting personality	4	8.17	1.52	7.95 - 8.38	5	3	8.14	1.49	7.87 - 8.41	5		
Intelligent	5	8.90	1.03	8.76 - 9.05	1	6	8.93	1.07	8.74 - 9.13	4		
Physically attractive	3	7.67	1.23	7.49 - 7.84	7	3	7.53	1.28	7.30 - 7.76	7		
Healthy	2	7.71	1.86	7.45 - 7.97	6	1	7.34	1.97	6.98 - 7.69	9		
Easygoing	1	7.14	1.80	6.88 - 7.39	8	2	7.32	1.87	6.98 - 7.65	10		
Creative	1	6.80	1.94	6.53 - 7.07	10	1	6.91	2.05	6.54 - 7.28	11		
Wants children	1	6.62	2.93	6.20 - 7.03	11	1	7.50	2.56	7.04 - 7.95	8	-2.83**	0.34
College graduate	1	6.59	2.32	6.27 - 6.92	12	1	5.76	2.56	5.30 - 6.22	12	2.99**	0.33
Good earning capacity	1	4.89	2.31	4.57 - 5.22	15	1	4.73	2.13	4.35 - 5.11	14		
Good heredity	1	5.29	2.40	4.95 - 5.62	14	1	4.72	2.47	4.27 - 5.16	15	2.06*	0.23
Good housekeeper	1	5.36	2.11	5.07 - 5.66	13	1	5.73	2.14	5.35 - 6.11	13		
Religious	1	2.37	2.07	2.08 - 2.66	16	1	2.03	1.88	1.70 - 2.37	16		

Note. [1]All characteristics received a maximum rating of 10 with the exception of "good housekeeper" in the group in a relationship/married (Max = 9). Single = 58 m, 140 f; In a relationship/married = 18 m, 105 f. MLC = mean-level comparisons (t-tests for independent samples). * $p < .05$ ** $p < .001$

Figure 6. Descriptive statistics for ratings by participants currently in a relationship and currently not in a relationship and group differences

currently in a relationship versus not being in a relationship) played a role in the relative importance of playfulness. To investigate differences in playfulness related to the participants' relationship status, we computed *t*-tests for independent samples. Prior to that, a one-way MANOVA using Pillai's trace revealed a significant effect of relationship status on the partner preference ratings, $V = 0.15$, $F(16, 289) = 3.18$, $p < .001$, $\eta^2_p = 0.15$. In keeping with our expectations, participants currently in a relationship ($n = 123$) showed higher levels of playfulness than those not currently in a relationship ($n = 198$); $t(304.97) = -2.29$, $p = .02$, $d = 0.25$. There were also differences in other ratings of desired characteristics of potential mates when comparing these two groups. Figure 6 displays the means, standard deviations, and minima of the ratings divided by these two groups, as well as the rank order of the characteristics in each of the groups.

As shown in figure 6, mean-level comparisons using *t*-tests for independent samples revealed that, aside from *playful*, participants in a relationship rated *kind and understanding*, *wants children, fun loving* and *sense of humor* (rank ordered according to effect sizes from largest to smallest) as more desirable, whereas participants who were currently single rated *college graduate* and *good heredity* as more desirable. Hence, the ratings on the importance of certain characteristics differed between the groups of those in a relationship versus those who were not.

Discussion

The main aim of the study presented in this article was to replicate and extend the findings by Chick et al. about the desirability of *playful* as an important characteristic of potential long-term mates. Our findings lend further support to the notion that being *playful* is seen as a desirable trait by potential long-term mates—not only among of participants in the U.S. study but also among those in German-speaking countries. Men and women seem to see a benefit in having a playful partner, which is in line with Chick's signal theory of playfulness (2001, 2013a; Chick et al. 2012). This conclusion also received independent support from another study, which found that individuals perceive playfulness as being beneficial to well-functioning romantic relationships by increasing the well-being of the partners, by maintaining the relationships' excitement, and by conveying the each individual's affection for his or her partner, and—more generally speaking—by more deeply cultivating the relationship (Proyer 2014c). Other studies have shown that different levels

of self-reported playfulness are associated with specific types of attachment and styles of loving (e.g., Proyer 2014d; Woll 1989) and that adolescents see humor and playfulness (Peterson and Seligman 2004) as important characteristics in a romantic partner (Weber and Ruch 2012). While the results of our study generally converged well with earlier investigations, we need to highlight specific findings.

The importance of *playful* as a desired characteristic in potential mates was ranked somewhat lower (8/16) in our study compared to the findings in Chick et al. (which reported 5/16). Taking into account the unreliability of the single-item measure and using confidence intervals for the interpretation of the rankings, participants in our study rated five characteristics (*kind and understanding intelligent*, *sense of humor*, *fun loving*, and *exciting personality*) more desirable than *playfulness* and rated six (*creative, college graduate, good housekeeper, good heredity, good earning capacity,* and *religious*) lower. Thus, we found that although participants considered *playful* important, they considered other characteristics, at least potentially, even more important. One might argue that the variance some attribute to the way lay people typically think of playfulness (cf. Proyer, 2014c) was filtered by other ratings. For example, many people consider humor an integral part of playfulness (e.g., Lieberman 1977; Peterson and Seligman 2004). We do not share this view (see Proyer, 2014a; Proyer and Jehle 2013; Proyer and Ruch 2011). Rather, we see humor and playfulness as attributes that overlap without being identical or redundant. There are situations where people can be playful without being humorous and vice versa. Hence, if some participants attributed specific facets of playfulness (those, say, associated with joy or entertainment) to other characteristics considered in this study, this might itself have lowered the relative importance they attributed to the trait labeled *playful*. There are also questions about the relationship of age to notions of playfulness. Although preliminary evidence suggests playfulness remains relatively stable across age (Proyer 2014b), greater experience with playfulness or other characteristics such as a different sense of humor might have an impact on the results. In short, some might speculate that the terms could be perceived differently by younger individuals than by older people—or that the perception changes with age.

Cross-cultural differences and linguistic differences may play a role in the findings. We need, at least, to mention that some of the differences between the data collected in the United States and in German-speaking countries might lie in the term under investigation. *Playful* seems to have somewhat different

connotations in the two languages and cultures. We have elaborated on this elsewhere in more detail (Proyer 2014a), but we want to note here that the word for *playfulness* in the German language is *Verspieltheit* and the prefix "*ver*" frequently has a negative connotation.

The German language also allows the use of the word *verspielt* (adjective) or *Verspieltheit* (noun) itself in a negative sense. "Haus und Hof *verspielen*" or "sein ganzes Geld verspielen," for example, would mean losing all of one's money—say, gambling in a casino. If a soccer player loses the ball, he or she would have *verspielt* the ball. Such subtle differences in the language might have had an impact on our ratings when we compare findings from the two countries. Nonetheless, even for German speakers, *verspielt* (playful) would mainly have positive connotations—if potentially more associated with silly and childlike behaviors than playful and its cognates are in other languages.

This warrants further research, perhaps employing a semantic differential (Osgood 1962) for uncovering these potential differences in connotation. It would be desirable to replicate these studies on the signal function of adult playfulness in various cultures, including areas where non–Indo-European languages are spoken. While the cultural differences between the United States and German-speaking countries are significant and have been studied previously in regard to mating preferences (e.g., Buss and Angleitner 1989), even greater differences may be observed when other cultures are compared (e.g., comparing findings from Western and Eastern cultures or, more generally speaking, comparing individualistic and collectivistic cultures or those differing strongly with respect to social hierarchy). Overall, we want to emphasize that a closer evaluation of the etymology of the respective words for playfulness and their connotative meanings in different languages may be fruitful to see if cultural differences have an impact and whether research in play and playfulness can benefit from cross-cultural research in leisure (Chick 2009).

Despite all of these potential difficulties, we were able to replicate the findings by Chick et al. (2012) and, therefore, to argue that our findings support the notion that playfulness serves an important role in mate selection.

Given our interest in extending earlier findings, as a first step we tested the role of individual differences in playfulness on the preference ratings. Searching for the connection between individual differences in a respective trait and mate selection has a long tradition in research about assortative mating (e.g., Botwin, Buss, and Shackelford 1997), but, so far, no one has investigated playfulness in adults from this perspective. Our results suggest that this might be a promising

direction for future research. We found that individuals high and low in playfulness differed in their preferences for potential long-term mates, especially with respect to playfulness and characteristics associated with playfulness. Those with higher scores in playfulness in our study consider being *playful* more desirable than less playful participants. Hence, playful individuals are interested in playful partners. Evidence even exists that men and women aspire to acquiring partners more playful than they are (Chick 2013 b). High scorers in playfulness also rated having a good *sense of humor*, being *fun loving*, having an *exciting personality*, being *easygoing* and *creative*, as well as being *intelligent* and *wanting children* as more desirable than less playful students. It is important to note at this point that our procedure for determining high and low playful individuals by splitting the data at the median does not allow us to speak of *playful* as opposed to *nonplayful* individuals. Nevertheless, in the case of playfulness, our findings seem to speak for assortative preferences in romantic relationships (see also Weber and Ruch 2012).

Chick (2001) suggested that playful men and women should have more children than nonplayful individuals. We did not test this hypothesis directly, but the finding that high scorers rated *wants children* as more important than *playful* compared to low scorers points in this direction, although wanting children and actually having them are not the same thing.

While individual levels of playfulness seem to play a role in mating preferences, we also noted that the high similarity between the rank orders of low and high playful participants points to the universality of the preferences. This finding fits the predictions derived from work on the signal function of playfulness very well.

To extend Chick et al. (2012) further, we wanted to test whether current relationship status played a role in the ratings. We found that participants currently in a romantic relationship displayed higher levels of *playfulness* than currently single participants. This in itself seems to support Chick's (2001) signal theory of playfulness that those who are playful appear more attractive to others and, therefore, are more likely to be in a relationship. Of course, that this does not take into account how long people were in their relationships or whether those not currently in relationships may actually be more successful or satisfied in their romantic relationships generally. For this reason, not only should this study be seen as only one possible test of Chick's expectations but also as an indication that we need further research. It may be that playful people are also more attractive to others in real life aside from the ratings people provide

in studies like this one. Because they may be more expressive, for example, they may make it easy to feel comfortable and communicate openly, and they may seem more authentic (see Proyer 2014c).

Those currently in relationships also rated *playful* (as well as *kind and understanding*, *wants children, fun loving,* and *sense of humor*) as more desirable and *college graduate* and *good heredity* as less desirable than those currently not in relationships. Those in relationships also seem to value playfulness more highly than those not in relationships. Greater playfulness may also help couples more easily overcome routine difficulties and keep their relationships interesting and exciting (Aune and Wong 2002). It has been shown that playfulness helps prevent boredom (Barnett 2011), and we might speculate that preventing boredom in itself is important for relationships. Some studies also advance the idea that playfulness in adults is associated with a specific *relationship personality*—the idea that there are differences in the preferences and types of behaviors displayed by individuals in romantic relationships (Proyer 2014c, 2014d; Woll 1989).

Of course, we need to consider sample characteristics if comparing our study's results to earlier findings (e.g., for the rank orders given in figure 1 and figure 4). The studies listed in figure 1 and our study used student samples. Nevertheless, the respective ages and gender distributions in these studies differed to a certain extent: mean age ranged between twenty and twenty-four years and the male-to-female ratio ranged between 32 to 68 and 65 to 35. The comparisons, however, point to more similarities than differences—both cross-culturally (when compared to the results obtained by Chick and his colleagues) and over a time period of more than twenty years (when compared to the results obtained by Buss and Angleitner in their study of German participants).

Limitations

This study has several limitations. Aside from those we have mentioned, as Chick et al. (2012) has already pointed out, mate preferences as assessed by desirability ratings do not necessarily predict actual behavior. Instead, they argue, it might reflect "ideals, not actual behavior" (430). Future studies might look at actual mating choices and investigate, for instance, assortative mating with regard to playfulness and related traits (see e.g., Weber and Ruch 2012).

In an obvious limitation, we did not study couples and, therefore, cannot

say whether the preference for playful partners we found in high scorers in playfulness translates to the actual selection of partners in real life. Furthermore, the question arises as to whether this preference suggests the participants' greater satisfaction with a partnership or with an attraction for a specific type of attachment. We also did not ask participants to indicate their sexual orientation, so we cannot know with certainty how many of the participants provided ratings for same sex partners or partners of the opposite sex. To the best of our knowledge, there is no empirical study that has assessed this question. Furthermore, the analyses based on the relationship status of the participants might be distorted by the level of experience with romantic relationships in general—we did not control for this variable. Future studies might well assess both sexual orientation and relationship experience in more detail and, also, test couples rather than single persons. Finally, women were overrepresented in our sample, and the three German-speaking countries were unequally represented. It would be desirable to replicate this study with a more gender-balanced sample and larger samples from each of the countries.

Future Research

As we mentioned, research in mating preferences—but also research into how playfulness can contribute to relationship satisfaction and different types of attachment—may benefit from studying couples rather than single persons. Also, the inclusion of data sources other than self-reports (e.g., ratings from knowledgeable others or behavior observations) would be beneficial. An interesting project for future research will be a differentiation of different types of playfulness (see e.g., Barnett 2007; Proyer, 2014a, 2012b; Proyer and Jehle 2013). There are risky types of play, for example, that may be especially attractive for people who rate high in playfulness (e.g., play associated with greater levels of sensation seeking) or even obsessive play behavior (e.g., gaming). Hence, the question becomes whether people value play and playfulness positively in general or whether they differentiate among subtypes and facets of playfulness. People inclined to risky play may send different signals to potential mates that those more inclined to safe play—and, again, age may play a role here because older people may think differently about risks than younger people do. As Burghardt (2005) wrote, "if play, including risky play, is a factor in sexual selection, . . .then the interest in females for risk-taking males needs to be studied" (390).

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