



New insights into the contributions of playfulness to dealing with stress at work: Correlates of self- and peer-rated playfulness and coping strategies

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ABSTRACT

Playfulness is an individual difference variable that enables people to experience and (re)frame situations of everyday life as interesting, entertaining, and/or stimulating. This definition is consistent with a structural model that includes four different playfulness facets: other-directed, lighthearted, intellectual, and whimsical playfulness. In the work context, playfulness has been shown to be related with various outcomes such as innovative behavior or intrinsic goals. We tested adult playfulness' associations with coping strategies employed at work and whether these coping strategies help to transfer the expected association between playfulness and employees' life satisfaction. Study 1 ($N = 185$; nursery school trainees) provides support for our hypothesis that playfulness is associated with more positive and less negative coping strategies when being confronted with general and work-specific stress. Study 2 ($N = 355$; employees from various working fields) confirms our results from study 1 by demonstrating that playfulness is related to adaptively coping with work stress. Further, study 2 shows that some playfulness facets were positively related to life satisfaction and that these associations were transferred by coping less negatively with work stress and, to some degree, also by utilizing positive control strategies. Overall, our findings indicate that adults' playfulness is of importance for coping with stress at work and to further explain employees' life-satisfaction. Directions for future research on playfulness in the work place are discussed.

Introduction

Playfulness has primarily been studied in children, but there is increasing interest in studying its impact on adult life. Research has linked adult playfulness to various positive outcomes, including higher levels of life and relationship satisfaction (Proyer, 2013; Proyer, Brauer, et al., 2019), positive affect (Barnett, 2011), better performance on written exams (Proyer, 2011), a preference for intrinsic goals at work (preference for challenges at work; Amabile et al., 1994; Yu et al., 2007), and innovative behavior (Bateson & Martin, 2013; Scharp et al., 2019). Previous research also shows that playfulness relates to lower levels of perceived stress and the usage of more adaptive coping strategies in university students (Clifford et al., 2022; Magnuson & Barnett, 2013). Extending this research to working adults and work-related coping seems crucial to investigating whether playfulness may also be an important personal resource for employees to cope with daily work stress. Given that other personality traits (e.g., extraversion, emotional stability, mindfulness, humor, orientations to happiness) are associated with adaptive coping strategies (Booth-Butterfield et al., 2007; Hülsheger et al., 2013; Swider & Zimmerman, 2010; Tandler et al., 2020),

studying the link between playfulness and coping in the workplace is crucial for understanding whether playfulness can serve as a personal resource to offset workplace burnout and improve mental and physical well-being. This study examined the associations between adult playfulness and coping strategies used at work. Furthermore, it explored whether coping strategies relate to the expected positive associations between playfulness and life satisfaction (Chang et al., 2013; Proyer, 2012, 2013; Proyer & Tandler, 2020; Qian & Yarnal, 2011). While previous research showed that positive emotions mediate the associations of playfulness and life satisfaction in university students, we sought to determine whether those linkages would hold in work environments. This study is novel in several ways. First, it extends the budding research on adult playfulness and positive mental health outcomes by taking a multimodal, multi-study approach and by examining these linkages within the context of work stress, to shed light on factors that may promote strengths based outcomes.

1. Playfulness

Adult playfulness is "an individual differences variable that allows

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people to frame or reframe everyday situations in a way such that they experience them as entertaining, and/or intellectually stimulating, and/or personally interesting” (Proyer, 2017, p. 114). This definition is accompanied by a multifaceted model differentiating among four facets: Other-directed (i.e., using one’s playfulness to ease and enjoy social situations); Lighthearted (i.e., an easy and carefree approach of life and liking to improvise); Intellectual (i.e., enjoying to play with ideas, preferring complexity over simplicity, and creating innovative and new solutions for a challenge); and Whimsical playfulness (i.e., a liking to break ranks, preferring extraordinary things and people; OLIW model). The four OLIW facets demonstrate high self-other agreement (Funder, 1995). High self-other agreement suggests that others validate individuals’ perceptions of themselves as playful, and can readily observe playfulness in those they know. Hence, playfulness seems to be a trait with high observability in others (i.e., high visibility or availability of information about playfulness from the perspective of knowledgeable others). Other-reports were obtained from various sources such as romantic partners (Proyer et al., 2018; Proyer, Brauer, et al., 2019), peers (Proyer, 2017; Proyer et al., 2018), and in other dyadic data of varying degrees of acquaintanceship (Proyer, 2017; Proyer & Brauer, 2018).

2. Stress coping

Coping occurs when people respond to perceived threats, harms, and losses and their resulting distress. People can react differently to the same objective adversities or stressors. Accordingly, coping is often defined as an individual’s habitual way of reacting to stressors by applying certain strategies (Erdmann & Janke, 2008). Coping is a broad concept that has been distinguished in different ways (e.g., positive vs. negative coping strategies; Erdmann & Janke, 2008). Positive coping strategies incorporate thoughts and actions that reduce the experience of stress (e.g., relaxation, positive self-instruction), while negative coping strategies lead to an immediate short-term reduction of the stress experience but in the long run enable ongoing stress (e.g., self-pity, resignation, social withdrawal; Erdmann & Janke, 2008).

Research has highlighted the importance of positive coping in the work domain for psychological well-being. A study on teachers demonstrated that the coping strategies of positive reframing and emotional support were related to lower levels of all aspects of burnout (emotional exhaustion, cynicism, and inefficacy), while no associations were found for the negative coping strategies denial and self-distraction (Tandler & Petersen, 2021). Similarly, across various occupations, adaptive classified coping strategies (devaluation, distraction, and control) were found to be positively related to aspects of work satisfaction (general, content-related, and resigned), and maladaptive classified coping (negative coping) was related to experiencing lower work satisfaction and higher levels of work stress (Tandler et al., 2020). *Devaluation* represents a cognitive coping method and entails self-aggrandizement through comparison with others and denial of guilt coping modes. *Distraction* represents seeking distraction from strain by focusing on situations and states that are incompatible with stress. It contains the two coping modes distraction and substitute gratification. *Control* represents the active control of stressors and reactions. The related coping modes are reaction control and positive self-instructions. *Negative coping* comprises the strategies escape, rumination, resignation, and self-blame.

3. Playfulness and stress coping

Research on the association of playfulness and coping strategies in adults is scarce. Magnuson and Barnett (2013) studied the interplay of playfulness, perceived stress, and coping strategies in young adults. Playful adults experienced lower stress levels and more frequently applied positive, stressor-focused coping strategies (e.g., positive reframing, humor, and instrumental and emotional support) than their

less playful counterparts. Similarly, playfulness was negatively related to the utilization of negative, avoidant, and escape-oriented coping strategies such as self-blaming. However, playful and less playful adults reported similar levels of using planning, venting, denial, substance use, and behavioral disengagement when dealing with stressors (Magnuson & Barnett, 2013). Recently, Clifford et al. (2022) found that playfulness related to the perception of pandemic-related stress and coping. Specifically, playful adults were more likely to perceive themselves as capable of managing distress, which was related to adaptive and supportive coping outcomes.

Overall, these findings suggest that playfulness facilitates responding to stressors more adaptively by applying positive, effective, and less negative coping strategies. Playfulness shapes the way people perceive specific situations in their daily lives and therefore impacts the perception of stress and the application of coping strategies to manage that stress (Clifford et al., 2022; Qian & Yarnal, 2011). Similarly, Berger et al. (2018) posit that, from a theoretical perspective, “a humorous and playful perspective might empower individuals to distance themselves from stressful life events by cognitive reappraisal towards a less threatening and distressing perception” (p. 212). Or, as Murray (1938) suggested, the *need for play* is a joyful way of stress reduction (e.g., by engaging in playful activities, such as games and leisure activities or by providing adults with the opportunity to experiment with different roles and perspectives). Accordingly, we expect positive associations of playfulness with positive coping strategies and negative associations of playfulness with negative coping strategies (i.e., strategies that are ineffective in ameliorating perceived levels of stress but keep them at the same level or may even elevate perceived levels of stress), both for general and work-related coping.

4. Playfulness, work-related coping, and life satisfaction

Life satisfaction (i.e., the cognitive component of subjective well-being) is frequently seen as a cognitive-judgmental process in which people globally evaluate their satisfaction with life according to self-set subjective criteria (Diener et al., 1985).

There is robust evidence that playfulness relates positively to life satisfaction (Proyer, 2012, 2013; Proyer & Tandler, 2020; Qian & Yarnal, 2011). As prior studies demonstrated this association only in younger and non-working people, such as adolescents, younger adults, or students, we aim at extending this finding to working adults or trainees enrolled at vocational training. Gaining comparable results from different samples may help strengthen the evidence for this association.

Diener et al. (1999) also highlighted the role of coping to facilitate, maintain, and protect well-being under adverse or challenging environmental demands. According to Lazarus’ transactional model of stress, coping with environmental demands not only depends on personality characteristics, but may also influence the relationship between those personality traits and well-being (Lazarus, 2006). Empirical research in the work domain supports this notion (e.g., Tandler et al., 2020). To the best of our knowledge, only one study has tested both the influences of playfulness in the stress coping process. Qian and Yarnal (2011) tested a structural equation model and showed that stress directly influenced playfulness, and playfulness directly influenced leisure coping strategies and quality of life. Leisure coping reflects the use of leisure to undertake enjoyable social activities, temporarily escape from stress, and regulate mood. The authors showed that playfulness was positively related to leisure coping and quality of life and that the negative association between leisure coping and quality of life was partially mediated by negative emotions. Building on this, we hypothesize that people who use positive work-related coping strategies are more satisfied with their lives, whereas people engaging in negative work-related coping would show lower life satisfaction. In addition, we propose that positive and negative work-related coping strategies will mediate the association between playfulness and life satisfaction.

5. Aims of the present study

We conducted two cross-sectional studies to test our hypotheses: Study 1 investigated the associations of playfulness with general and work-related positive and negative coping strategies in trainee nursery school teachers. Study 2 tested whether the relationship between playfulness and life satisfaction is influenced by the way people cope with challenges and distress occurring at their workplace.

6. Study 1: playfulness and general and work-related coping

It can be argued that play and being playful are core benefits when working as a teacher in nursery schools. We propose that playfulness in teachers helps them to cope adaptively with job-related demands (e.g., appropriately addressing the needs of the children and their parents, fostering positive relationships with colleagues, supporting their students in their creative expression and problem-solving-abilities, and, additionally, also balancing administrative responsibilities). In fact, the official job description provided by the responsible state department in Saxony-Anhalt (the county in Germany where this study was conducted), purports that in order to support children's physical, mental, and social development, nursery school teachers have to organize and guide playful activities such as doing crafts, playing music, telling stories, and finding new and innovative ways to engage children in games (Kultusministerium des Landes Sachsen-Anhalt, 2015). Because playing is the actual behavior and playfulness the propensity to play (Proyer, 2017), we expect accordingly, that playfulness may help deal with workplace demands for nursery school teacher trainees, because of its associations with positive and negative coping strategies. Therefore, our mixed method study (using quantitative and qualitative methods and self-and peer-reports) aimed at examining associations between playfulness and positive and negative coping strategies in (a) a general and (b) a work-specific context.

To address a potential method bias when using self-reports only (Campbell & Fiske, 1959) and since peer-ratings can also predict outcomes independently from self-ratings (Vazire & Mehl, 2008), we also tested the associations using peer-rated playfulness. Previous research demonstrated high convergence for self-other agreement among different indicators of playfulness ($r_s = 0.44\text{--}0.57$; Proyer, 2017; Proyer et al., 2018); the coefficients are in the range reported for other trait-variables (e.g., Connolly et al., 2007). Overall, we expect that peer-rated playfulness will be positively associated with self-reported positive coping strategies and negatively associated with self-reported negative coping strategies.

Secondly, we used a vignette that describes a typical stressful situation at nursery school and asked the participants to freely write down how they would typically respond. Using this qualitative data assessment approach, we derived indices of ongoing emotional processes from these descriptions. These processes may indicate the impact of personality traits (e.g., playfulness) and the usage of positive or negative coping strategies. Both personality and coping may result in a specific mindset (e.g., calm and open vs. stressed and closed) and, hence, influence emotional states in stressful work situations. However, the two approaches to assessing coping may not converge due to the different types of assessment (self-report vs. count data from vignette-based written descriptions) and different foci (general vs. specific coping; Cohen & Lazarus, 1973; McCrae, 1992). Examining how playfulness relates to workplace coping might bring new insights regarding the role of playfulness in coping processes and introduce new practical implications for playfulness interventions as suggested by Proyer et al. (2021).

6.1. Method

6.1.1. Participants and procedure

The sample contained 185 trainees and was gathered from all

available classes stemming from three different vocational schools with the support of the schools' administrations. The participants completed their questionnaires on playfulness in a group setting during regular school time and were given an individual code. A fellow trainee used this code for the peer-ratings of the targets' playfulness. Participants were informed that they could withdraw from the study at any time and without any consequences. All trainees participated voluntarily, and the study was in compliance with the local ethical guidelines at the University of Halle-Wittenberg, Germany. For underage trainees, parents provided consent prior to testing. No compensation for any person involved was provided. Inclusion criteria were parental consent for the underage trainees and the willingness to participate in this survey. Accordingly, we excluded trainees who were unwilling to participate or who were not in school on the day of the survey. All data and syntaxes are available via the Open Science Framework (<https://osf.io/u74dy/>).

Peer-ratings of global playfulness for 181 participants from their fellow trainees were collected using a valid rating scale (for detailed information, see the measures section). In order to control the level of acquaintance and familiarity, participants had to choose a peer rater from among their fellow trainees who they thought knew them very well. In order to avoid perceiver effects, peers were instructed to rate not more than two fellow trainees. We controlled this by using codes for raters. Indeed, 138 raters rated one participant, 13 raters rated two participants, and two raters rated three participants. The remaining raters did not provide a code.

6.1.2. Measures

Global Playfulness. The *Short Measure of Adult Playfulness* (SMAP; Proyer, 2012) assesses an easy onset and high intensity of playful experiences accompanied by frequent displays of playful behaviors (e.g., "I am a playful person."; 5 items). The response scales for all playfulness measures were a 7-point Likert scale (1 "strongly disagree" to 7 "strongly agree"). This measure was used for peer- and self-ratings. All other measures were used for self-ratings only. The classmates who provided the peer-ratings completed the peer-rating version of the SMAP (Proyer, 2017; e.g., "He/she is a playful person"). Apart from the item wording, the peer-rating version is identical to the standard self-rating version.

Playfulness Facets. The OLIW-questionnaire (Proyer, 2017) assesses other-directed (e.g., "I have close friends with whom I can just fool around and be silly"), lighthearted (e.g., "I don't worry about most of the things that I have to do, because there will always be some kind of a solution"), intellectual (e.g., "When thinking about a problem, I look for a fixed scheme for the solution and only rarely rely on a playful approach to solve the problem"), and whimsical playfulness (e.g., "I have the reputation of being somewhat unusual or flamboyant"). Each scale consists of seven items. The internal consistency of the intellectual scale in the current study was low. In order to maintain comparability with findings from other studies in this area, no items were omitted nor was the scale adjusted.

General Coping Strategies. Coping with stressors was measured with the standard self-report questionnaire in German-speaking countries, the short version of the *Stress Coping Questionnaire* (*Stressverarbeitungsfragebogen*; SVF-78; Erdmann & Janke, 2008). It consists of 78 items that assess coping with general stressful situations. Each item started with the same instruction: "When I am disturbed, irritated, or upset by something or someone (...)". Participants responded to the coping items regarding how likely they would generally cope in the respective manner on a 5-point Likert scale (0 "not at all" to 4 "very likely"). The authors' instructions in choosing an appropriate level of analysis were followed. Accordingly, it was distinguished between negative coping (e.g., "[...] I try to avoid this situation.") and three subscales of positive coping strategies. The *positive coping strategies* are *Devaluation* (e.g., "[...] I take it easier than other people."), *Distraction* (e.g., "[...] I try to distract myself somehow."), and *Control* (e.g., "[...] I tell myself that I can handle it.").

Work-Related Coping Strategies. Trainees' coping strategies applied in

work situations were measured by combining a qualitative assessment with a quantitative approach: We instructed each student to read the following vignette describing a stressful situation at nursery school. The vignette was created in a discussion by a multi-professional team consisting of three nursery school teachers, two educational psychologists, and three psychology students after several iterations and pre-tests with trainees trained in nursery schools, in order to reflect a realistic scenario in a work situation. The main aim was to create a realistic scenario that contained several simultaneously demanding situations that possibly create a feeling of stress in the trainee.

“You have just had lunch with 14 children. Now, all kids have to go to the small bathroom that is a short distance away. Your adviser is sick and you are alone with another nursery school teacher. The dirty dishes need to be removed and the kids need to be accompanied to the bathroom to clean their teeth. Some kids need help going to the toilet. Three kids are still at the table taking their lunch, while the majority of the kids are already in the bathroom. You realize that two older kids have begun quarreling. You instruct them to stop their argument and move to the bathroom. Unfortunately, these kids cannot hear you due to the background noise. You are about to go to them when a mother comes in to pick up her child. This mother asks you about how her child was doing this morning and informs you that her child will be absent from nursery school in a few days due to an allergy test.”

Trainees were instructed to pay attention to what crosses their minds and how they would act in this situation. Then, they were asked to freely describe their thoughts and behaviors in up to ten sentences.

These descriptions were then analyzed using the German default version (Wolf et al., 2008) of the *Linguistic Inquiry and Word Count* (LIWC; Pennebaker et al., 2007) software. The software quantifies the free descriptions by computing the relative number of words used by the participants by matching their text data to the internal dictionary in which words are assigned to categories representing psychological processes (e.g., emotional, social, cognitive) and physical functions (e.g., eating, body, sexual). As recommended by Wolf et al. (2008), misspellings in the participants’ texts were corrected before running the analysis. Our approach builds on previous LIWC analyses that showed good reliability (Pennebaker & King, 1999) and validity (cf. Pennebaker et al., 2003).

Finally, two relative scores for each participant that imply emotional processes were computed: (a) the relative number of positive emotional

words (e.g., love, nice, sweet), and (b) the relative number of negative emotional words (e.g., hurt, ugly, nasty). These emotional processes should additionally inform about trainees’ coping strategies applied in stressful work situations.

Descriptive statistics and internal consistencies for all instruments are presented in Table 1.

6.2. Results

Our sample consisted of 185 trainees enrolled in vocational training for nursery school education in Germany (78.9% women, 18.9% men; others did not report their gender). Participants were on average 24.24 years old ($SD = 7.78$) with an age range of 17–51 years. They graduated from various school tracks: the majority ($n = 91, 49.2\%$) graduated from high school, qualifying them to attend university (12–13 years in school), 54 (29.2%) from secondary school medium track (10 years in school), and 2 (1.1%) from secondary school low track (9–10 years in school). Thirty-eight participants (20.5%) did not report their graduation level. The peer raters were on average $M = 24.23$ years old ($SD = 7.70, range = 18–51$ years), and the majority were women (81.3%; 18.7% were men).

On average, the participants used two to three relatively positive emotional words ($M = 2.40, SD = 2.92, range = 0.00–14.71$) and two relatively negative emotional words ($M = 1.83, SD = 2.36, range = 0.00–16.67$). The difference in using positive and negative emotion words was significant (small effect size); $t(180) = 2.03, p = 0.043, d = 0.21$. Thus, participants described their reactions and thoughts more frequently in favorable than in unfavorable emotional terms. About one third of the participants made no positive description (36.2%) and more than two fifths (41.1%) made no negative description. No significant association between the two emotional word categories counted was found ($r = -0.03; p = 0.730$).

Correlation coefficients with age and gender were of small to medium size (see ESM A, <https://osf.io/u74dy/>). Men rated themselves higher than women in all playfulness facets except for other-directed. Accordingly, age and gender were controlled in the following analyses. The convergence between the self- and peer-reported global playfulness was robustly positive with $r = 0.44 (p < 0.001; ESM A)$, replicating earlier findings (Proyer et al., 2018; Proyer et al., 2020). General positive and general negative coping did not correlate significantly with the amount of positive or negative emotion words used when writing about coping with specific work-related stressors ($r_s \leq 0.15, p_s \geq 0.048$).

Table 1

Means, Standard Deviations, and Internal Consistencies of self-rated Study Variables and Correlations of self- and peer-rated Playfulness (Global and Facets) with Positive and Negative Coping Strategies (General and Work-Related) Controlled for Age and Gender (Study 1).

	O	L	I	W	ΔR^2 (OLIW)	SMAP	M (SD)	α	SMAP
	Self-rated								peer-rated
<i>General coping strategies:</i>									
Positive (total)	0.25 ^b	0.23 ^b	0.29 ^c	0.17 ^a	0.12 ^c	0.21 ^b	2.16 (0.17)	0.91	0.01
Devaluation	0.14	0.09	0.21 ^b	0.12	0.05	0.18 ^a	2.11 (0.16)	0.89	0.02
Distraction	0.11	0.33 ^c	0.21 ^b	0.22 ^b	0.11 ^c	0.11	1.72 (0.02)	0.82	0.03
Control	0.27 ^c	0.11	0.21 ^b	0.06	0.09 ^c	0.16 ^a	2.47 (0.03)	0.90	-0.02
Negative (total)	-0.03	-0.22 ^b	-0.12	0.01	0.07 ^a	-0.01	1.91 (0.19)	0.95	-0.04
ΔR^2 (Coping)	0.07 ^b	0.12 ^c	0.08 ^b	0.07 ^a		0.05			0.00
<i>Work-related coping strategies:</i>									
Positive emotions	0.19 ^a	0.16 ^a	0.12	0.00	0.07 ^a	0.10	2.40 (2.92)	-	0.08
Negative emotions	-0.15 ^a	0.03	0.04	-0.02	0.03	-0.15 ^a	1.83 (2.36)	-	-0.25 ^b
M (SD)	5.39 (0.92)	4.34 (1.08)	4.02 (0.80)	4.34 (0.95)	-	4.95 (1.16)	-	-	4.97 (1.25)
Cronbach’s α	0.69	0.77	0.49	0.70	-	0.87	-	-	0.91

Notes. $N = 185$. SMAP (Short Measure of Adult Playfulness) = Global Playfulness. O = Other-directed; L = Lighthearted; I = Intellectual; W = Whimsical. Playfulness values ranged from 1 to 7. Positive and negative coping strategy values ranged from 0 to 4. Higher scores indicate higher endorsement. ΔR^2 (OLIW) = unique amount of explained variance by facets of playfulness beyond age and gender. ΔR^2 (Coping) = unique amount of explained variance by the three positive coping scales devaluation, distraction, control, and negative coping (total) beyond age and gender.

^a $p < .05$.

^b $p < .01$.

^c $p < .001$, all two-tailed.

6.2.1. Relationships between self-rated playfulness and general coping strategies. Partial correlations (controlling for age and gender) between self-reported playfulness (facets and global) and types of general coping strategies (Table 1) were computed. There was support for our hypotheses: Global playfulness and all facets of playfulness were positively associated with general positive coping total score, and lighthearted playfulness was negatively associated with general negative coping. A detailed look at the correlational pattern of the general positive coping subscales shows that intellectual playfulness was consistently related to all positive coping subscales, but the other playfulness facets showed differential associations. Global playfulness was positively related to positive coping in general and the positive subscales of devaluation and control. The playfulness facets explained between 7% (negative coping strategies) and 12% (positive coping strategies) of unique variance beyond age and gender.

Five separate hierarchical stepwise regression analyses were conducted with the four playfulness facets as joint predictors (step 2; Step 1 = age and gender) and general positive (total score, devaluation, distraction, control) and general negative coping strategies as outcome variables (Table 2). Our regression models were supported by post hoc power analyses (method: special increase of R^2 , fixed model, $\alpha = 0.05$; Faul et al., 2007). In the final models, intellectual playfulness positively explained total positive coping ($f^2 = 0.14$; $1-\beta = 0.99$), and lighthearted playfulness negatively explained total negative coping ($f^2 = 0.08$; $1-\beta = 0.88$). In the final models of the positive coping subscales, intellectual playfulness explained devaluation ($f^2 = 0.06$; $1-\beta = 0.75$) and control ($f^2 = 0.09$; $1-\beta = 0.92$), and lighthearted playfulness explained distraction ($f^2 = 0.14$; $1-\beta = 0.99$). Hence, among the playfulness facets, intellectual playfulness was the most strongly related to the general coping strategies in the regression analysis. Overall, our findings suggest that positive coping strategies were higher in those participants who liked to play with ideas and thoughts, and negative coping was lower in those who reported greater lighthearted playfulness.

6.2.2. Self-reported playfulness and work-related coping strategies. Controlling for their age and gender (see Table 1), participants with higher levels of other-directed and lighthearted playfulness reported more positive emotion words and less frequent negative emotion words in an envisioned work-related stress situation. Further, other-directed and global playfulness were associated with the less frequent use of negative

Table 2
Hierarchical multiple regression analyses explaining types of general coping strategies (positive and negative) from age, gender, and facets of playfulness (study 1).

Model	Positive coping				Negative coping
	Total	Devaluation	Distraction	Control	
	β	β	β	β	β
Step 1: Demographics					
Age	0.17 ^a	-0.05	0.06	0.30 ^c	-0.05
Gender	-0.06	-0.01	-0.21 ^b	0.06	0.23 ^b
Step 2: Facets of playfulness					
O	0.13	0.07	-0.05	0.22 ^b	0.00
L	0.12	-0.01	0.27 ^b	0.02	-0.27 ^b
I	0.22 ^b	0.19 ^a	0.09	0.19 ^a	-0.07
W	0.00	0.04	0.09	-0.10	0.15
$\Delta R^2/R^2$	0.12/.18	0.06/.06	0.12/.22	0.08/.18	0.07/.15
F	6.26 ^c	1.70	8.22 ^c	6.51 ^c	4.92 ^c

Note. N = 185. Age in years, Gender: 1 = women, 2 = men. ΔR^2 = unique amount of explained variance by facets of playfulness. O = other-directed; L = lighthearted; I = intellectual; W = whimsical. Playfulness values can range from 1 to 7. Negative and positive coping strategy values can range from 0 to 4. Higher scores indicate higher endorsement.

^a $p < .05$.
^b $p < .01$.
^c $p < .001$, all two-tailed.

emotion words. The shared variance between playfulness facets and positive and negative emotions was 7% and 3%, respectively.

6.2.3. Relationships between peer-rated global playfulness and all coping strategies. Peer-rated global playfulness was widely unrelated to self-reported general positive and negative coping strategies and positive emotion words in work-related coping (controlling for age and gender, Table 1). However, there was a negative association between peer-rated global playfulness and the amount of negative emotion words for work-related coping ($r = -0.25$, $p < 0.01$).

6.3. Discussion

The main aim of Study 1 was to examine the associations of playfulness (both OLIW facets and self-/peer-rated global playfulness) with positive and negative general coping strategies and coping within a work-related context in nursery school trainees. We argue that being playful could be an important contributor to fulfilling work-related daily demands appropriately in a nursery context. The main findings support our expectations: Playfulness in nursery school trainees relates to the usage of more positive and less negative coping strategies when dealing with general and work-specific stress.

6.3.1. Relationship between playfulness, general and work-related coping. In this particular work and educational setting, experiencing and displaying playful activities frequently and with high intensity might enhance stress-reducing strategies such as deviating and controlling the stressor. Our analysis of the role of the facets of playfulness in coping provides a more fine-grained analysis of the benefits of a playful disposition for managing distress. Among all facets, intellectual playfulness (i.e., playing with ideas and thoughts) showed the most robust associations with general positive coping strategies in nursery school teachers. Interestingly, nursery school teachers' intellectual playfulness was unrelated to negative coping strategies in general and specific contexts. This converges well with findings for adolescents (Proyer & Tandler, 2020), where intellectual playfulness was also unrelated to negative outcomes such as trait anxiety and avoidance achievement. We argue that the characteristics that are associated with negative coping (escape, rumination, resignation, and self-blame) require some cognitive engagement; especially, rumination (i.e., the thoughts that lead to resignation and self-blame). These characteristics, however, are not inherently playful thought processes. The characteristics of negative coping are rather more somber and serious, and thus inconsistent with an intellectually playful approach.

Lighthearted playfulness was related to positive coping in general and in a context-specific environment, such as a nursery school work setting. Lighthearted people are described as seeing life more like a game and not worrying too much about future consequences (Proyer, 2017), and this approach to life relate to the positive coping strategy of distraction. Distraction means dealing with demanding situations by remaining relaxed and seeking distraction by focusing on situations and states that are incompatible with stress. Again, this converges well with data from adolescents (Proyer & Tandler, 2020), where lighthearted playfulness was also related to less trait anxiety and avoidance achievement.

Other-directed playfulness was the only playfulness facet that was related to both positive and negative work-related coping strategies in the stress-induced situation. Given that the vignette entails a predominantly social situation (e.g., attending to a parent's request, settling an argument between children, directing behavior of children), other-oriented playfulness might have enabled nursery school teachers to more easily loosen up tense or challenging situations with others and make social relations more interesting. When the children are quarreling, other-oriented nursery school teachers could find amusement in this everyday work situation by inventing a game or some interesting rules for the children to stop their argument and get even

something good or educational out of it (e.g., learning social rules). At the same time, this might help reduce stress on the teacher's side.

6.3.2. Convergence between self- and peer-rated playfulness. In line with our expectations, peer-ratings by fellow trainees converged with nursery school trainee teachers' self-rated playfulness ($r_s = 0.16$ to 0.44). The relations were numerically lower for lighthearted and intellectual playfulness compared to previously reported findings (e.g., Proyer et al., 2018) suggesting that nursery teachers' self-perceived intellectual and lighthearted playfulness are rather different from what is seen by peers targeting global playfulness of their fellows. Probably, intellectual and lighthearted playfulness is not as observable as other-directed or whimsical playfulness for the informants used in this study. The latter might be easier observable when people spend time together across various situations. The more salient a trait is, the more valid information observers get for their judgments (Leising & Borkenau, 2011). Information about a person's other-directed playfulness can be assessed easily (e.g., by a person's interpersonal behaviors such as talking to others or laughing) while information about a person's lightheartedness (e.g., hardly worries about future consequences) might be more internal, less frequently verbalized, and, generally speaking, difficult to assess for others. Nevertheless, our results largely confirm that playfulness is a well-observable trait.

6.3.3. Limitations. The assessment of work-related coping strategies is based on participants imagining a hypothetical stress-inducing situation at nursery school. This method might not represent how playfulness shapes responses to demanding situations under real-life stress. Nevertheless, our results fit into previous research demonstrating that employees' playfulness is adaptively related to the amount of perceived functions of playfulness at work (Proyer, 2014). Also, the reliability of the intellectual playfulness score was low in this particular sample. This is probably an effect of the selection procedure for those currently in training and, relatedly, restrictions in the variance of the scores. Hence, the findings for intellectual playfulness presented here probably underestimate the relationships because of the low reliability coefficient. Also, one needs to be cautious when transferring our results to nursery teachers in general due to differences in years of job experience, levels of playfulness and capability of using playfulness as a coping technique (if being burned out).

Finally, our linguistic word count analyses may have limitations but nevertheless represent an initial step towards an informative mixed-method approach for studying playfulness in adults within the context of the work setting. Another set of analyses could be done to examine qualitatively, at a more thematic level, the content of participants' written responses, allowing for analyses beyond word counts for emotion words alone.

6.3.4. Practical implications. Introducing play-based interventions (i.e., three playful things, using playfulness in a new way, and counting playfulness) that enhance playfulness (e.g., Proyer et al., 2021) in the training curriculum of candidate nursery school teachers might offer promising practical solutions for everyday problems. This might help fostering a positive learning environment for the children. It is evident that the demands of a classroom setting can sometimes lead to a more structured approach (e.g., learning curricula, learning goals, etc.), potentially limiting play time in general and, more specifically, limiting opportunities for spontaneous play among the students. Teachers who embody playfulness or have playful strategies at their disposal can create a more engaging and stimulating atmosphere for children, which, in turn, could help them learning and support their development. Also, pending further research, using play and playfulness could be helpful in providing emotional support to children who are struggling with negative coping strategies.

7. Study 2: work-related coping as mediator in the association of playfulness and life satisfaction

Dealing adaptively with work-related demands by reducing perceived stress is associated with work-related well-being (Tandler et al., 2020). Work is one domain in adults' life where people usually spend a good deal of their time. Thus, coping with work demands adaptively might have a spillover effect on people's general satisfaction with life. Establishing playfulness and its role in the stress coping process within work contexts may provide evidence for future psychoeducational and work-related interventions to reduce stress, improve coping, and increase life satisfaction. Thus, the aim of Study 2 was to examine the associations between playfulness, stress coping, and life satisfaction within a sample of employees of various occupations. Study 2 builds on Study 1 by striving to replicate the findings of the relationships between playfulness and coping; especially, work-related coping in working professionals. Additionally, Study 2 aims to (2) examine the relationship between playfulness and life satisfaction, and to (3) examine whether the relationship between playfulness and life satisfaction is mediated by coping strategies (see Fig. 1 for the research model). Our hypotheses are that, consistent with previous research (see Clifford et al., 2022), for employees in the work context, playfulness will relate to positive forms of stress coping that will have positive influences on life satisfaction. Playfulness as a personality trait is likely to influence the situationally sensitive stress coping process and indirectly influence the psychosocial outcome – life satisfaction. We seek to determine if there are differential influences of different types of playfulness on different stress coping strategies that may differentially impact life satisfaction allowing us to provide evidence for applications to improve life satisfaction for employees at work.

7.1. Method

7.1.1. Participants and procedure

Participants were recruited using diverse strategies, including personal contacts, internet forums, social networks (e.g., Xing), leaflets, and placards at public places. Additionally, companies were requested to take part (social networks for professionals such as Xing, personal contacts, online forums). Participants were offered individual feedback and to participate in a lottery to win a voucher. Participants completed the online questionnaire (www.unipark.com) in about 60 min. The sample consisted of $N = 355$ employees. The study was conducted in accordance with the local ethical guidelines at the University of Zurich, Switzerland (where the data collection has been organized).

7.1.2. Measures

As in Study 1, playfulness was assessed using the SMAP (Proyer, 2012) and OLIW (Proyer, 2017).¹ For both playfulness measures, the response scale was 1 ("does not apply at all") to 4 ("is very true"); this was due to an administrative error when preparing the materials and possible consequences are outlined in the discussion. Again, the short form of the *Stress Coping Questionnaire* (*Stressverarbeitungsfragebogen*; SVF-78; Erdmann & Janke, 2008) was used but adapted to assess stress processing at the workplace using the instruction: "When I was affected, upset, or overbalanced at work (.)." The response scale was identical to Study 1. One SVF item had 47% random missing values, but no systematic pattern was found.² Additionally, approximately 75% of all

¹ In Study 2 an older version of the OLIW was used. It differs from the newer version used in Study 1 by one item having a slightly different wording, but identical content.

² The wording of the item is „I tell myself: It's not my fault“ (SVF43). We tested whether sample characteristics, playfulness, coping, or life satisfaction were related to a greater likelihood of not answering this item. However, no significant differences were found for cases with vs. without missing values.

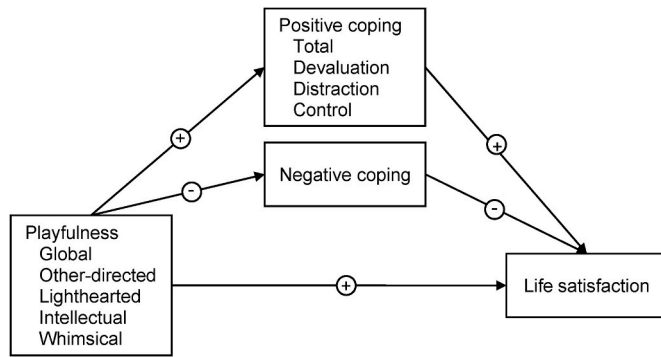


Fig. 1. Research model of study 2.

Note. “+” and “-” represent the direction of the assumed bivariate relation.

other SVF items had missing values, but only in small amounts and with no observable systematic pattern. Overall, all SVF items had a missingness rate of only 0.01%. Accordingly, mean imputation was used to replace missing values (van Buuren, 2018).

Participants’ general life satisfaction was measured using the *Satisfaction with Life Scale* (Diener et al., 1985; German version: Glaesmer et al., 2011; e.g., “In most ways my life is close to my ideal.”; 5 items). Participants responded on a seven-point Likert scale ranging from 1 (“strongly disagree”) to 7 (“strongly agree”).

For all scales, descriptive statistics and internal consistencies are presented in Table 3.

7.2. Results

The sample comprised $N = 355$ employees from a wide range of occupations (60.0% women, 40.0% men) with a mean age of 39.01 years ($SD = 10.86$; range = 17–65 years). Participants were mostly from Switzerland (50.7%), Germany (43.7%), and Austria (4.2%). Their educational level was high: Most held a university degree (Bachelor-level or higher; 62.3%), followed by vocational training (24.8%), a higher education entrance degree (10.4%), and a secondary school degree (2.5%). The majority of participants were married or currently in a relationship (61.4%); the remainder were single (38.6%). The majority (70.4%) of the participants worked full-time, 14.2% of the participants worked part-time (70–90% of full-time), and the remaining participants (15.4%) worked part-time too, but to a lesser extent (40–60% of full-time).

On average, participants had been employed for at least 6.20 years (range: 2 weeks to 43 years). Nearly one third of employees (30.4%) had managerial responsibilities, 10.1% were CEOs, while the remaining participants (59.5%) had no managerial responsibilities. Participants worked in a variety of fields; Social, Health, and Human Services (34.2%), Manufacturing (19.3%), and Science and Technology (13.5%); all occupational fields are presented in ESM B; <https://osf.io/u74dy/>).

Intercorrelations between global playfulness and facets of playfulness and their correlations with age and gender are presented in ESM C (<https://osf.io/u74dy/>). Age correlated negatively with global and other-directed playfulness (both $r_s = -0.15$, $p < 0.01$) and positively with lighthearted and intellectual playfulness ($0.12 \geq r_s \leq 0.14$, $p_s < 0.05$). Women reported higher levels of other-directed and whimsical playfulness than men. Though correlations were small, the potential effects of age and gender were controlled for.

7.2.1. Correlation and regression analyses

Table 3 shows the correlations (controlled for age and gender) of global playfulness and facets of playfulness with coping and life satisfaction. Global playfulness was positively related to positive coping total score and the positive subscales of control and distraction ($0.11 \geq r_s \leq 0.25$, $p_s < 0.05$), and not related to negative coping. Global playfulness

was related to the positive subscale distraction, but not to the positive subscale devaluation. Facets of playfulness were positively related to most positive coping strategies ($0.11 \geq r_s \leq 0.28$, $p_s < 0.05$). The only insignificant correlation coefficients were the associations between other-directed playfulness and devaluation and between whimsical playfulness and distraction. Facets of playfulness accounted simultaneously for 4–9% of variance in positive coping (beyond age and gender). Except for whimsical playfulness, all playfulness facets correlated negatively with negative coping. Overall, our findings mainly support the assumed relationships between playfulness and positive and negative coping.

For life satisfaction, the expected positive relationship with playfulness was partially confirmed, as all playfulness facets except whimsical playfulness were significantly positively associated with life satisfaction. Finally, both total scores of positive ($r = 0.25$, $p < 0.001$) and negative coping ($r = -0.48$, $p < 0.001$) were found to be significantly correlated with life satisfaction in the expected directions (ESM C). Higher life satisfaction was also associated with the positive coping subscales of devaluation and control, but not distraction.

Hierarchical regression analyses were conducted to explain each coping strategy by the four facets of playfulness simultaneously while controlling for age and gender (Table 4). Lighthearted playfulness explained the positive subscale distraction and negative coping. Lighthearted playfulness was the only facet that explained positive coping strategies; namely, the total score of positive coping and the positive subscale devaluation, but not the positive subscale control coping. In addition, intellectual playfulness explained negative coping. Contrary to the correlational results, neither facet of playfulness explained the positive subscale control coping. When explaining life satisfaction within the hierarchical regression, lighthearted and intellectual playfulness showed significant positive effects.

7.2.2. Mediation analyses

The mediation analysis was conducted using the PROCESS macro (version 4.0) in SPSS with 10,000 bootstrap samples (Hayes, 2018). The regression models explaining life satisfaction included age and gender as covariates, either global playfulness or a playfulness facet as single predictor, and multiple parallel intervening variables (devaluation, distraction, control, and negative coping). Preacher and Hayes (2008) argue for the use of multiple mediator models instead of single mediator models. Note that a “mediator” is always an intervening variable, but not vice versa. Both require the presence of an indirect effect (a^*b), but only the former also requires the presence of a total effect (c ; Hayes, 2009; MacKinnon et al., 2002). In addition to single predictor mediation models, a multiple predictor mediation model with all playfulness facets included simultaneously was run in order to examine which playfulness facet(s) would be most influential for explaining coping and life satisfaction. All data and syntaxes are available in the OSF (<https://osf.io/u74dy/>).

Coping as Potential Mediator. As shown in Table 5, total indirect effects (i.e., the sum of the four specific indirect effects via the four intervening variables) were found for each facet of playfulness, but not for global playfulness. The associations of other-directed, lighthearted, and intellectual playfulness were fully (in case of lighthearted playfulness) or partially (in cases of other-directed and intellectual playfulness) mediated by coping strategies. For whimsical playfulness, a mediating effect was found.

Other-directed playfulness. The relationship among other-directed playfulness and life satisfaction was partially mediated by both the positive control coping and also negative coping. Higher other-directed playfulness had a direct effect on control coping which related to higher levels of life satisfaction; whereas higher other-directed coping related to lower negative coping which related to life satisfaction. The difference between both indirect effects was not significant ($\text{diff} = -0.10$; $p > 0.05$). Because there was a significant direct effect both indirect effects indicated partial mediations.

Table 3

Means, standard Deviations, and internal consistencies of study variables and correlations of playfulness (global and facets) with employees' positive and negative coping strategies and life satisfaction controlled for age and gender (study 2).

	O	L	I	W	ΔR^2 (OLIW)	SMAP	M (SD)	α
<i>Work-related coping strategies:</i>								
Positive (total)	0.21 ^c	0.28 ^c	0.21 ^c	0.13 ^b	0.09 ^c	0.18 ^c	2.12 (0.42)	0.89
Devaluation	0.10	0.25 ^c	0.13 ^a	0.14 ^b	0.07 ^c	0.04	1.65 (0.59)	0.84
Distraction	0.18 ^c	0.25 ^c	0.14 ^a	0.04	0.07 ^c	0.25 ^c	1.86 (0.60)	0.83
Control	0.18 ^c	0.14 ^b	0.17 ^b	0.11 ^a	0.04 ^b	0.11 ^a	2.60 (0.54)	0.87
Negative	-0.17 ^b	-0.37 ^c	-0.25 ^c	-0.07	0.14 ^c	0.03	1.70 (0.75)	0.95
ΔR^2 (Coping)	0.09 ^c	0.22 ^c	0.10 ^c	0.02	-	0.07 ^c	-	-
Life satisfaction	0.22 ^c	0.26 ^c	0.24 ^c	0.05	0.10 ^c	0.08	4.81 (1.21)	0.89
M (SD)	2.89 (0.55)	2.59 (0.55)	2.73 (0.47)	2.59 (0.56)	-	2.57 (0.74)	-	-
Cronbach's α	0.73	0.77	0.64	0.77	-	0.89	-	-

Note. $N_s = 353-355$. SMAP (Short Measure of Adult Playfulness) = global playfulness. O = other-directed; L = lighthearted; I = intellectual; W = whimsical. Playfulness values can range from 1 to 4. Positive and negative coping strategy values can range from 0 to 4. Higher scores indicate higher endorsement. ΔR^2 (OLIW) = Explained variance by facets of playfulness beyond age and gender. ΔR^2 (Coping) = Explained variance by Devaluation, Distraction, Control, and Negative (total) beyond age and gender.

^a $p < .05$.

^b $p < .01$.

^c $p < .001$, all two-tailed.

Table 4

Hierarchical multiple regression analyses explaining types of work-related coping strategies (positive and negative) and life satisfaction from age, gender, and facets of playfulness (study 2).

Model	Positive work-related coping				Negative work-related coping	Life satisfaction
	Total	Devaluation	Distraction	Control		
	β	β	β	β	β	β
<i>Step 1: Demographics</i>						
Age	0.08	0.10	-0.06	0.12 ^a	-0.19 ^c	0.08
Gender	-0.16 ^b	-0.02	-0.19 ^c	-0.13 ^a	-0.17 ^b	-0.04
<i>Step 2: Facets of playfulness</i>						
O	0.08	-0.05	0.09	0.11	0.03	0.11
L	0.21 ^c	0.25 ^c	0.22 ^c	0.03	-0.34 ^c	0.17 ^b
I	0.06	0.00	0.02	0.09	-0.13 ^a	0.15 ^a
W	0.00	0.06	-0.07	0.02	0.11	-0.11
$\Delta R^2/R^2$	0.09/.11	0.07/.08	0.07/.11	0.04/.07	0.14/.20	0.10/.10
F	7.44 ^c	4.72 ^c	6.97 ^c	4.25 ^c	15.40 ^c	6.67 ^c

Note. $N = 353$. Age in years, Gender: 1 = women, 2 = men. O = Other-directed; L = Lighthearted; I = Intellectual; W = Whimsical. Playfulness values can range from 1 to 4. Coping strategy values can range from 0 to 4. Life satisfaction values can range from 1 to 7. Higher scores indicate higher endorsement. ΔR^2 = unique amount of explained variance by facets of playfulness.

^a $p < .05$.

^b $p < .01$.

^c $p < .001$, all two-tailed.

Lighthearted playfulness. The effect of lighthearted playfulness on life satisfaction was, again, mediated by control coping and negative coping. Higher lighthearted playfulness had a direct effect on control coping which related to higher levels of life satisfaction; whereas higher lighthearted coping related to lower negative coping which related to life satisfaction. The indirect effects were different ($\text{diff} = -0.29, p < 0.05$). The direct effect was not significant.

Intellectual playfulness. The effect of intellectual playfulness on life satisfaction was also partially mediated by control coping and also by negative coping. Again, higher intellectual playfulness had a direct effect on control coping which related to higher levels of life satisfaction; whereas higher intellectual coping related to lower negative coping which related to life satisfaction. The indirect effects differed from each other ($\text{diff} = -0.21, p < 0.05$). The direct effect was significant indicating a partial mediation.

Whimsical playfulness. The effect of whimsical playfulness on life satisfaction was intervened solely by control coping. Higher levels of whimsical playfulness had a direct effect on control coping which related to higher levels of life satisfaction.

In sum, the results mostly supported our hypothesis that the association of employees' playfulness with their general life satisfaction is

differentially mediated by positive and negative coping strategies. When including the four playfulness facets simultaneously into one mediation analysis, the effects of lighthearted and intellectual playfulness on life satisfaction were fully mediated by negative coping, whereas other indirect effects were not significant.

7.3. Discussion

Study 2 further expands the knowledge on the relation between playfulness and coping by focusing exclusively on work-related coping. Again, we found that those high in global playfulness and facets of playfulness coped more positively with work stress. Across both of our studies, total positive coping was positively related to all four facets of playfulness and global playfulness. When looking at the positive subscales, the relational pattern across both seem to be similar as well in term of direction and size of the correlational coefficients, however, there are differences in reaching the significance levels, given that sample size of study 2 is larger. However, one should assume rather small to medium effect sizes. In line with Study 1, negative coping with work stress was associated with lower expressions in lighthearted and global playfulness. Additionally, Study 2 revealed negative relationships

Table 5
Parallel mediation analyses explaining life satisfaction (10,000 bootstrap samples; study 2).

Independent variable (IV)	Intervening variable (M)	Total effect (c)	Effect of IV and M (a)	Effect of M on DV (b)	Direct effect (c')	Total indirect effect ($\sum ab$)	Specific indirect effect (ab)
Other-directed	Devaluation	0.50^c/0.24	0.10/-0.05	0.12/0.15	0.26^a/0.23	0.23^d/0.00	0.01/-0.01
	Distraction		0.20^b/0.10	0.01/-0.01			0.00/-0.00
	Control		0.18^c/0.11	0.34^b/0.34^b			0.06^d/0.04
	Negative coping		-0.23 ^b /0.04	-0.71 ^c /-0.68 ^c			0.16^d/-0.02
Lighthearted	Devaluation	0.57^c/0.37^b	0.27^c/0.27^c	0.10/0.15	0.14/0.01	0.43^d/0.36^d	0.03/0.04
	Distraction		0.26^c/0.24^c	0.02/-0.01			0.01/-0.00
	Control		0.13^a/0.03	0.38^b/0.34^b			0.05^d/0.01
	Negative coping		-0.48 ^c /-0.46 ^c	-0.72 ^c /-0.68 ^c			0.35^d/0.31^d
Intellectual	Devaluation	0.62^c/0.40^a	0.17^a/-0.00	0.11/0.15	0.24^a/0.22	0.38^d/0.18^d	0.02/0.00
	Distraction		0.17^a/0.02	0.03/-0.01			0.00/-0.00
	Control		0.20^b/0.11	0.36^b/0.34^b			0.07^d/0.04
	Negative coping		-0.32 ^c /-0.21 ^a	-0.71 ^c /-0.68 ^c			0.28^d/0.15^d
Whimsical	Devaluation	0.11/-0.23	0.15^a/0.06	0.11/0.15	-0.02/-0.15	0.12^d/-0.08	0.02/0.01
	Distraction		0.04/-0.08	0.06/-0.01			0.00/0.00
	Control		0.10^a/0.02	0.38^b/0.34^b			0.04^d/0.01
	Negative coping		-0.09/0.14	-0.75 ^c /-0.68 ^c			0.07/-0.10
SMAP	Devaluation	0.13	0.04	0.11	0.12	0.01	0.00
	Distraction		0.20^c	0.02			0.00
	Control		0.08	0.37^b			0.03^d
	Negative coping		0.03	-0.75 ^c			-0.02

Note. *N*s = 353–355. All mediation analyses were conducted while controlling for age and gender. Effects presented on the left of the forward slash are from single predictor models (as for SMAP), effects right to the slash are from models using all facets of playfulness simultaneously as predictors. Playfulness values can range from 1 to 4. Coping strategy values can range from 0 to 4. Life satisfaction values can range from 1 to 7. Higher scores indicate higher endorsement. Parameter estimates are unstandardized regression coefficients.

^a *p* < .05.

^b *p* < .01.

^c *p* < .001, all two-tailed.

^d Significant point estimates (*p* < .05) using 95% Bootstrapping confidence interval.

between negative coping and both other-directed and intellectual playfulness.

Extending the previous study, we examined life satisfaction as a potential outcome and effectiveness indicator of the stress-coping process (Lazarus, 2006). We found that the facets of playfulness other-directed, lighthearted, and intellectual playfulness had positive effects on life satisfaction and that these effects were mediated by coping less negatively with work stress and, to some degree, also by utilizing positive control strategies. Our findings on the relationship between facets of playfulness and life satisfaction align with previous research conducted on diverse populations, including adults (Farley et al., 2020) and adolescents (Proyer & Tandler, 2020). Similarly to findings from Study 1, life satisfaction in Study 2 showed positive associations with the playfulness facets other-directed, lighthearted, and intellectual playfulness. However, no significant relationships were observed between life satisfaction and whimsical playfulness. Interestingly, our mediation analyses revealed that the positive association between playfulness and life satisfaction is carried forward by two coping strategies: control (actively managing stress) and negative coping (avoidance, rumination, etc.). Surprisingly, positive coping strategies like devaluation (self-comparison) and distraction did not play a mediating role in this model. This pattern held true for other-directed, lighthearted, and intellectual playfulness.

7.3.1. Limitations and implications

One limitation refers to the trait-like assessment of coping in the workplace. Studies have shown that dispositional coping explains only little to moderate variance in coping with specific stressors (Cohen & Lazarus, 1973; McCrae, 1992). Therefore, research examining how playfulness relates to coping with specific work-related stressors is needed. However, such an assessment requires the examination of more homogeneous occupations (e.g., blue- or white-collar workers) and of different kinds of work stressors (e.g., time pressure, ostracism, fatigue). Another potential limitation is that this study was cross-sectional and therefore any interpretation of the causal or predictive influences of playfulness and stress coping on life satisfaction cannot be ascertained.

Nevertheless, we provide evidence of the associations among these variables and their potential as important constructs for further empirical and applied scholarship.

8. General discussion

In two studies and using a sample of nursery school trainees (self- and peer-ratings) and employees of various occupations, we examined the relationship between global and facets of playfulness, general and work-related coping, and life satisfaction. Playfulness was associated with a greater use of positive and less use of negative coping strategies in both studies. The differential associations of playfulness facets with coping subscales highlight the importance of distinguishing facets of playfulness, assessing different aspects of coping in both a general and work-related context, and utilizing multiple sources of information (i.e., self- and peer-ratings). When adding life satisfaction in Study 2, we found positive relationships with playfulness as well as positive coping, and negative relationships with negative coping strategies. Overall, the association between playfulness and life satisfaction was partially mediated by positive and negative coping but showed differential findings concerning playfulness facets and positive coping subscales. Our findings are unique as they focused on employees in work contexts, however they support the general mediation patterns shown in other research (see Clifford et al., 2022).

One of the main questions emerging from this line of research is how people can capitalize on their playfulness to better cope with stressors in their daily lives. Even if we cannot derive causality from the findings of both studies, it seems as if playfulness may be related to using coping strategies that are effective in ameliorating perceived stress. In children, it is argued that play and being playful may help in establishing a sense of mastery and certain level of control in their lives—even if only in fantasy-type environments (Erikson, 1950; Piaget, 1951). Adults indicated that they use their playful dispositions to gain mastery orientation and better cope with the internal and external demands of life (Proyer, 2014). An interesting follow-up question is whether individuals can improve their stress management by incorporating playfulness into their

daily routines. Recent work on *Playful Work Design* (Bakker et al., 2020; Sharp et al., 2019) may open up an avenue to study such processes.

It seems as if trade-offs need to be considered: To play and be playful may cost time spent not actively working, but may help in reducing tension and perceived stress. Also, while not actively working, recuperation through play and the relief experienced when distracting oneself with something playful may, in turn, help increase productivity and innovative behavior at work (Bateson & Martin, 2013; Yu et al., 2007). The type of occupation also needs to be considered. Brauer et al. (2021) found that police officers in a special unit were higher in *other-directed* playfulness than librarians (Hedges $g = 0.36$), while the latter were higher in *intellectual* types of playfulness ($g = 0.36$). They argued that both types of playfulness may serve different functions, for example, facilitating team spirit and affiliation before or after responding to an emergency vs. using intellectual playfulness to cope with monotony and repeating tasks. Hence, individuals bring playfulness into their work contexts, and therefore understanding how the person-environment fit (French et al., 1982) leads to better coping in stressful work encounters will help identify ways that individuals, managers, and organizations can better cultivate work productivity and satisfaction by creating contexts in which playfulness is encouraged.

Taking lessons learned from a related field into account, there is potential for playfulness interventions. McGhee (2010) proposes a Humor Habits Program (7HHP) in which the final (and most difficult to learn) habit is “Find humor in the midst of stress.” Research will have to show whether using *playfulness* in the midst of stress may have similar effects. As a side note, it should be mentioned that McGhee’s second habit (the habits are hierarchically ordered) is “Cultivate a playful attitude.” According to McGhee, people need to be able to cultivate a playful attitude in order to find humor even in stressful situations (Berger et al., 2018). Initial findings on self-administered online interventions in a placebo-controlled design showed that playfulness-based activities have the potential to increase well-being and ameliorate depression up to 12 weeks (Proyer et al., 2021). Finally, research shows that play and playfulness are important for productivity and creativity in workplace teams (West et al., 2016, 2017). Playful team members could contribute to the team by keeping stress levels generally low, as they may experience fewer situations as being stressful and/or have positive coping strategies available that help combat the negative effects of environmental stress in work teams. Hence, expanding the present study to examine the role of playfulness in work teams may be beneficial to identify key playful team members who can be catalysts for productivity, creativity, and work satisfaction.

Our findings highlight the importance of emphasizing the role of playfulness in dealing with work-related challenges and demands in future research. Research has identified other adaptive work outcomes that are associated with employees’ playfulness, such as intrinsic motivation (Amabile et al., 1994), job performance (Proyer, Tandler, & Brauer, 2019), and finding creative solutions (Proyer, Brauer, et al., 2019; Scharp et al., 2019). Playfulness in employees could potentially improve both their personal well-being and work-related outcomes, suggesting that promoting playfulness could be a valuable long-term strategy for supporting well-being in and out of the workplace. Despite its potential, research into the role of playfulness in the work context remains limited within one profession. By examining how playfulness can contribute to job demand coping and overall life satisfaction for employees in different occupations, future research could expand the focus of occupational playfulness research and enhance its relevance to contemporary work environments (e.g., Bakker et al., 2020; Proyer, 2014). Recognizing and nurturing playfulness in the work environment may bring about significant advantages, whereas overlooking its importance could be a missed opportunity at many different levels.

CRediT authorship contribution statement

Nancy Tandler: Writing – review & editing, Writing – original draft, Methodology, Formal analysis, Data curation, Conceptualization. **Stanley Schilling-Friedemann:** Writing – original draft, Software, Methodology, Conceptualization. **Leslie D. Frazier:** Writing – review & editing, Writing – original draft. **Rebekka Sendatzki:** Writing – review & editing, Writing – original draft, Methodology, Formal analysis, Conceptualization.

Data availability

All data are available via the Open Science Framework (<https://osf.io/u74dy/>).

References

- Amabile, T. M., Hill, K. G., Hennessey, B. A., & Tighe, E. M. (1994). The work preference inventory: Assessing intrinsic and extrinsic motivational orientations. *Journal of Personality and Social Psychology*, 66(5), 950–967. <https://doi.org/10.1037/0022-3514.66.5.950>
- Bakker, A. B., Scharp, Y. S., Breevaart, K., & de Vries, J. D. (2020). Playful work design: Introduction of a new concept. *Spanish Journal of Psychology*, 23, e19. <https://doi.org/10.1017/SJP.2020.20>
- Barnett, L. A. (2011). How do playful people play? Gendered and racial leisure perspectives, motives and preferences of college students. *Leisure Sciences*, 33, 382–401. <https://doi.org/10.1080/01490400.2011.606777>
- Bateson, P., & Martin, P. (2013). *Play, playfulness, creativity and innovation*. New York: Cambridge University Press.
- Berger, P., Bitsch, F., Bröhl, H., & Falkenberg, I. (2018). Play and playfulness in psychiatry: A selective review. *International Journal of Play*, 7(2), 210–225. <https://doi.org/10.1080/21594937.2017.1383341>
- Booth-Butterfield, M., Booth-Butterfield, S., & Wanzer, M. (2007). Funny students cope better: Patterns of humor enactment and coping effectiveness. *Communication Quarterly*, 55(3), 299–315. <https://doi.org/10.1080/01463370701490232>
- Brauer, K., Scherrer, T., & Proyer, R. T. (2021). Testing the associations between adult playfulness and sensation seeking: A SEM analysis of librarians and police officers. *Frontiers in Psychology*, 2066. <https://doi.org/10.3389/fpsyg.2021.667165>
- Campbell, D. T., & Fiske, D. W. (1959). Convergent and discriminant validation by the multitrait-multimethod matrix. *Psychological Bulletin*, 56(2), 81–105. <https://doi.org/10.1037/h0046016>
- Chang, P. J., Qian, X., & Yarnal, C. (2013). Using playfulness to cope with psychological stress: Taking into account both positive and negative emotions. *International Journal of Play*, 2(3), 273–296. <https://doi.org/10.1080/21594937.2013.855414>
- Clifford, C., Paulk, E., Lin, Q., Cadwallader, J., Lubbers, K., & Frazier, L. D. (2022). Relationships among adult playfulness, stress, and coping during the COVID-19 pandemic. *Current Psychology*. <https://doi.org/10.1007/s12144-022-02870-0>
- Cohen, F., & Lazarus, R. S. (1973). Active coping processes, coping dispositions, and recovery from surgery. *Psychosomatic Medicine*, 35(5), 375–389. <https://doi.org/10.1097/00006842-197309000-00002>
- Connolly, J. J., Kavanagh, E. J., & Viswesvaran, C. (2007). The convergent validity between self and observer ratings of personality: A meta-analytic review. *International Journal of Selection and Assessment*, 15(1), 110–117. <https://doi.org/10.1111/j.1468-2389.2007.00371.x>
- Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment*, 49(1), 71–75. https://doi.org/10.1207/s15327752jpa4901_13
- Diener, E., Suh, E. M., Lucas, R. E., & Smith, H. L. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin*, 125(2), 276–302. <https://doi.org/10.1037/0033-2909.125.2.276>
- Erdmann, G., & Janke, W. (2008). *Stressverarbeitungsfragebogen: SVF [stress coping questionnaire: SVF; Measurement instrument]*. Hogrefe.
- Erikson, E. (1950). *Childhood and Society*. New York: Norton.
- Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, 39(2), 175–191. <https://doi.org/10.3758/BF03193146>
- French, J. R. P., Jr., Caplan, R. D., & Harrison, R. V. (1982). *The mechanisms of job stress and strain*. London: Wiley.
- Funder, D. C. (1995). On the accuracy of personality judgment: A realistic approach. *Psychological Review*, 102, 652–670. <https://doi.org/10.1037/0033-295X.102.4.652>
- Glaesmer, H., Grande, G., Braehler, E., & Roth, M. (2011). The German version of the Satisfaction with Life Scale (SWLS): Psychometric properties, validity, and population-based norms. *European Journal of Psychological Assessment*, 27(2), 127–132. <https://doi.org/10.1027/1015-5759/a000058>
- Hayes, A. F. (2009). Beyond Baron and Kenny: Statistical mediation analysis in the new millennium. *Communication Monographs*, 76(4), 408–420. <https://doi.org/10.1080/03637750903310360>
- Hayes, A. F. (2018). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach* (2nd ed.). The Guilford Press.

- Hülsheger, U. R., Alberts, H. J. E. M., Feinholdt, A., & Lang, J. W. B. (2013). Benefits of mindfulness at work: The role of mindfulness in emotion regulation, emotional exhaustion, and job satisfaction. *Journal of Applied Psychology, 98*(2), 310–325. <https://doi.org/10.1037/a0031313>
- Kultusministerium des Landes Sachsen-Anhalt. (2015). *Fachrichtungslehrplan Fachschule Sozialwesen* [Curriculum specialized school social services]. Magdeburg, Germany: MK Sachsen-Anhalt.
- Lazarus, R. S. (2006). *Stress and emotion: A new synthesis*. Springer.
- Leising, D., & Borkenau, P. (2011). Person perception, dispositional inferences, and social judgment. In L. M. Horowitz, & S. Strack (Eds.), *Handbook of interpersonal psychology: Theory, research, assessment, and therapeutic interventions* (pp. 157–170). Hoboken, NJ: Wiley.
- MacKinnon, D. P., Lockwood, C. M., Hoffman, J. M., West, S. G., & Sheets, V. (2002). A comparison of methods to test mediation and other intervening variable effects. *Psychological Methods, 7*(1), 83–104. <https://doi.org/10.1037/1082-989X.7.1.83>
- Magnuson, C. D., & Barnett, L. A. (2013). The playful advantage: How playfulness enhances coping with stress. *Leisure Sciences, 35*(2), 129–144. <https://doi.org/10.1080/01490400.2013.761905>
- McCrae, R. R. (1992). Situational determinants of coping. In B. N. Carpenter (Ed.), *Personal coping. Theory, research, and application* (pp. 65–76). London: Praeger.
- McGhee, P. (2010). *Humor as survival training for a stressed-out world: The 7 humor habits program*. AuthorHouse.
- Murray, H. A. (1938). *Explorations in personality*. Oxford University Press.
- Pennebaker, J. W., Booth, R. J., & Francis, M. E. (2007). *Linguistic Inquiry and word count: LIWC [computer software]*. Austin, TX: LIWC.net.
- Pennebaker, J. W., & King, L. A. (1999). Linguistic styles: Language use as an individual difference. *Journal of Personality and Social Psychology, 77*(6), 1296–1312. <https://doi.org/10.1037/0022-3514.77.6.1296>
- Pennebaker, J. W., Mehl, M. R., & Niederhoffer, K. G. (2003). Psychological aspects of natural language use: Our words, our selves. *Annual Review of Psychology, 54*, 547–577. <https://doi.org/10.1146/annurev.psych.54.101601.145041>
- Piaget, J. (1951). *Play, dreams, and imitation in childhood*. London: Routledge.
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods, 40*(3), 879–891. <https://doi.org/10.3758/BRM.40.3.879>
- Proyer, R. T. (2011). Being playful and smart? The relations of adult playfulness with psychometric and self-estimated intelligence and academic performance. *Learning and Individual Differences, 21*(4), 463–467. <https://doi.org/10.1016/j.lindif.2011.02.003>
- Proyer, R. T. (2012). Development and initial assessment of a short measure for adult playfulness: The SMAP. *Personality and Individual Differences, 53*(8), 989–994. <https://doi.org/10.1016/j.paid.2012.07.018>
- Proyer, R. T. (2013). The well-being of playful adults: Adult playfulness, subjective well-being, physical well-being, and the pursuit of enjoyable activities. *The European Journal of Humour Research, 1*(1), 84–98. <https://doi.org/10.7592/EJHR2013.1.1.proyer>
- Proyer, R. T. (2014). Perceived functions of playfulness in adults: Does it mobilize you at work, rest, and when being with others? *European Review of Applied Psychology, 64* (5), 241–250. <https://doi.org/10.1016/j.erap.2014.06.001>
- Proyer, R. T. (2017). A new structural model for the study of adult playfulness: Assessment and exploration of an understudied individual differences variable. *Personality and Individual Differences, 108*, 113–122. <https://doi.org/10.1016/j.paid.2016.12.011>
- Proyer, R. T., & Brauer, K. (2018). Exploring adult Playfulness: Examining the accuracy of personality judgments at zero-acquaintance and an LIWC analysis of textual information. *Journal of Research in Personality, 73*, 12–20. <https://doi.org/10.1016/j.jrp.2017.10.002>
- Proyer, R. T., Brauer, K., Wolf, A., & Chick, G. (2019). Adult playfulness and relationship satisfaction: An APIM analysis of romantic couples. *Journal of Research in Personality, 79*, 40–48. <https://doi.org/10.1016/j.jrp.2019.02.001>
- Proyer, R. T., Gander, F., Bertenshaw, E. J., & Brauer, K. (2018). The positive relationships of playfulness with indicators of health, activity, and physical fitness. *Frontiers in Psychology, 9*, 1440. <https://doi.org/10.3389/fpsyg.2018.01440>
- Proyer, R. T., Gander, F., Brauer, K., & Chick, G. (2021). Can playfulness be stimulated? A randomised placebo-controlled online playfulness intervention study on effects on trait playfulness, well-being, and depression. *Applied Psychology: Health and Well-Being, 13*(1), 129–151. <https://doi.org/10.1111/aphw.12220>
- Proyer, R. T., & Tandler, N. (2020). An update on the study of playfulness in adolescents: Its relationship with academic performance, well-being, anxiety, and roles in bullying-type-situations. *Social Psychology of Education, 23*(1), 73–99. <https://doi.org/10.1007/s11218-019-09526-1>
- Proyer, R. T., Tandler, N., & Brauer, K. (2019). Playfulness and creativity: A selective review. In S. R. Luria, J. Baer, & J. C. Kaufman (Eds.), *Creativity and humor* (pp. 43–56). Academic Press. <https://doi.org/10.1016/B978-0-12-813802-1.00002-8>
- Qian, X. L., & Yarnal, C. (2011). The role of playfulness in the leisure stress-coping process among emerging adults: An SEM analysis. *Leisure/Loisir, 35*(2), 191–209. <https://doi.org/10.1080/14927713.2011.578398>
- Scharp, Y. S., Breevaart, K., Bakker, A. B., & van der Linden, D. (2019). Daily playful work design: A trait activation perspective. *Journal of Research in Personality, 82*, Article 103850. <https://doi.org/10.1016/j.jrp.2019.103850>
- Swider, B. W., & Zimmerman, R. D. (2010). Born to burnout: A meta-analytic path model of personality, job burnout, and work outcomes. *Journal of Vocational Behavior, 76* (3), 487–506. <https://doi.org/10.1016/j.jvb.2010.01.003>
- Tandler, N., Krauss, A., & Proyer, R. T. (2020). Authentic happiness at work: Self- and peer-rated orientations to happiness, work satisfaction, and stress coping. *Frontiers in Psychology, 11*, 1931. <https://doi.org/10.3389/fpsyg.2020.01931>
- Tandler, N., & Petersen, L.-E. (2021). Schützt Selbstmitgefühl angehende Lehrkräfte vor dem Burnout? Über die protektive Rolle von Selbstmitgefühl im Lehramtsreferendariat. [Does Self-compassion preserve beginning teachers against burnout? The protective role of Self-compassion in teachers' induction phase]. *Psychologie in Erziehung und Unterricht, 68*, 81–99. <https://doi.org/10.2378/peu2021.art05d>
- van Buuren, S. (2018). *Flexible imputation of missing data* (2nd ed.). Chapman and Hall/CRC.
- Vazire, S., & Mehl, M. R. (2008). Knowing me, knowing you: The accuracy and unique predictive validity of self-ratings and other-ratings of daily behavior. *Journal of Personality and Social Psychology, 95*(5), 1202–1216. <https://doi.org/10.1037/a0013314>
- West, S. E., Hoff, E., & Carlsson, I. (2016). Play and productivity: Enhancing the creative Climate at workplace Meetings with play cues. *American Journal of Play, 9*(1), 71–86.
- West, S., Hoff, E., & Carlsson, I. (2017). Enhancing team creativity with playful improvisation theater: A controlled intervention field study. *International Journal of Play, 6*(3), 283–293. <https://doi.org/10.1080/21594937.2017.1383000>
- Wolf, M., Horn, A. B., Mehl, M. R., Haug, S., Pennebaker, J. W., & Kordy, H. (2008). Computergestützte quantitative Textanalyse: Äquivalenz und Robustheit der deutschen Version des Linguistic Inquiry and Word Count [Computer-aided quantitative text analysis: Equivalence and reliability of the German adaptation of the Linguistic Inquiry and Word Count]. *Diagnostica, 54*(2), 85–98. <https://doi.org/10.1026/0012-1924.54.2.85>
- Yu, P., Wu, J. J., Chen, I. H., & Lin, Y. T. (2007). Is playfulness a benefit to work? Empirical evidence of professionals in taiwan. *International Journal of Technology Management, 39*(3–4), 412–429. <https://doi.org/10.1504/IJTM.2007.013503>